**Python Web Scraping**

Here’s a comprehensive guide to Python web scraping, complete with explanations and examples. This material is designed to help you understand the basics of web scraping, the tools involved, and how to implement them effectively.  
  
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## \*\*What is Web Scraping?\*\*  
Web scraping is the process of extracting data from websites. It involves fetching a webpage and parsing its content to retrieve specific information.  
  
### \*\*Common Use Cases\*\*  
- Collecting product prices from e-commerce websites.  
- Gathering news articles or blog posts.  
- Extracting data for research or analysis.  
  
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## \*\*Legal and Ethical Considerations\*\*  
Before scraping a website:  
1. \*\*Check the website's Terms of Service\*\* to ensure scraping is allowed.  
2. \*\*Respect the `robots.txt` file\*\*, which specifies the rules for web crawlers.  
3. Avoid overloading the server with too many requests in a short time.  
  
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## \*\*Tools for Web Scraping in Python\*\*  
1. \*\*`requests`\*\*: For sending HTTP requests to fetch web pages.  
2. \*\*`BeautifulSoup`\*\*: For parsing HTML and XML documents.  
3. \*\*`lxml`\*\*: A fast parser for HTML and XML.  
4. \*\*`selenium`\*\*: For scraping dynamic websites that require JavaScript rendering.  
  
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## \*\*Step-by-Step Guide with Examples\*\*  
  
### \*\*1. Installing Required Libraries\*\*  
Install the necessary libraries using pip:  
```bash  
pip install requests beautifulsoup4 lxml selenium  
```  
  
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### \*\*2. Fetching a Web Page with `requests`\*\*  
The `requests` library is used to send HTTP requests and retrieve the HTML content of a webpage.  
  
#### Example:  
```python  
import requests  
  
# URL of the webpage to scrape  
url = "https://example.com"  
  
# Send a GET request  
response = requests.get(url)  
  
# Check the status code  
if response.status\_code == 200:  
 print("Page fetched successfully!")  
 print(response.text) # Print the HTML content  
else:  
 print(f"Failed to fetch page. Status code: {response.status\_code}")  
```  
  
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### \*\*3. Parsing HTML with `BeautifulSoup`\*\*  
`BeautifulSoup` is used to parse and navigate the HTML content.  
  
#### Example:  
```python  
from bs4 import BeautifulSoup  
  
# Sample HTML content  
html\_content = """  
<html>  
 <head><title>Example Page</title></head>  
 <body>  
 <h1>Welcome to Example.com</h1>  
 <p>This is a sample paragraph.</p>  
 <a href="https://example.com/link1">Link 1</a>  
 <a href="https://example.com/link2">Link 2</a>  
 </body>  
</html>  
"""  
  
# Parse the HTML content  
soup = BeautifulSoup(html\_content, "html.parser")  
  
# Extract specific elements  
title = soup.title.text  
heading = soup.h1.text  
paragraph = soup.p.text  
links = [a['href'] for a in soup.find\_all('a')]  
  
print("Title:", title)  
print("Heading:", heading)  
print("Paragraph:", paragraph)  
print("Links:", links)  
```  
  
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### \*\*4. Scraping a Real Website\*\*  
Let’s scrape a real website (e.g., a blog) to extract article titles.  
  
#### Example:  
```python  
import requests  
from bs4 import BeautifulSoup  
  
# URL of the blog  
url = "https://example-blog.com"  
  
# Fetch the webpage  
response = requests.get(url)  
  
# Parse the HTML content  
soup = BeautifulSoup(response.text, "html.parser")  
  
# Extract article titles  
titles = [h2.text for h2 in soup.find\_all('h2', class\_='article-title')]  
  
print("Article Titles:")  
for title in titles:  
 print("-", title)  
```  
  
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### \*\*5. Handling Dynamic Websites with `selenium`\*\*  
Some websites use JavaScript to load content dynamically. `selenium` can automate a browser to scrape such websites.  
  
#### Example:  
```python  
from selenium import webdriver  
from selenium.webdriver.common.by import By  
from selenium.webdriver.chrome.service import Service  
from selenium.webdriver.chrome.options import Options  
  
# Set up Chrome WebDriver  
options = Options()  
options.add\_argument("--headless") # Run in headless mode (no GUI)  
service = Service("path/to/chromedriver") # Replace with the path to your ChromeDriver  
driver = webdriver.Chrome(service=service, options=options)  
  
# Open the webpage  
url = "https://example.com"  
driver.get(url)  
  
# Extract dynamic content  
elements = driver.find\_elements(By.CLASS\_NAME, "dynamic-content")  
for element in elements:  
 print(element.text)  
  
# Close the browser  
driver.quit()  
```  
  
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### \*\*6. Saving Scraped Data\*\*  
You can save the scraped data to a file for further analysis.  
  
#### Example: Save to CSV  
```python  
import csv  
  
# Sample data  
data = [  
 {"Title": "Article 1", "Link": "https://example.com/article1"},  
 {"Title": "Article 2", "Link": "https://example.com/article2"},  
]  
  
# Save to CSV  
with open("scraped\_data.csv", "w", newline="", encoding="utf-8") as file:  
 writer = csv.DictWriter(file, fieldnames=["Title", "Link"])  
 writer.writeheader()  
 writer.writerows(data)  
  
print("Data saved to scraped\_data.csv")  
```  
  
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### \*\*7. Advanced Techniques\*\*  
#### \*\*a. Using Proxies\*\*  
To avoid getting blocked, you can use proxies to rotate IP addresses.  
```python  
proxies = {  
 "http": "http://proxy\_ip:proxy\_port",  
 "https": "https://proxy\_ip:proxy\_port",  
}  
response = requests.get(url, proxies=proxies)  
```  
  
#### \*\*b. Adding Headers\*\*  
Some websites block requests without proper headers (e.g., User-Agent).  
```python  
headers = {  
 "User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/537.36"  
}  
response = requests.get(url, headers=headers)  
```  
  
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## \*\*Common Challenges\*\*  
1. \*\*Anti-Scraping Measures\*\*: Websites may block requests or use CAPTCHAs.  
2. \*\*Dynamic Content\*\*: Requires tools like `selenium` or APIs.  
3. \*\*Data Cleaning\*\*: Extracted data may need preprocessing.  
  
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## \*\*Practice Exercises\*\*  
1. Scrape the top news headlines from a news website.  
2. Extract product names and prices from an e-commerce website.  
3. Scrape weather data from a weather forecasting website.  
  
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This material should give you a solid foundation in web scraping with Python. Let me know if you'd like to dive deeper into any specific topic!

websites for practice web scraping

Here are some websites that are great for practicing web scraping. These websites are either designed for learning purposes or have publicly available data that can be scraped ethically. Always ensure you follow the website's terms of service and respect their `robots.txt` file.  
  
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## \*\*Websites Designed for Web Scraping Practice\*\*  
  
### 1. \*\*[Books to Scrape](http://books.toscrape.com/)\*\*  
- A website specifically created for web scraping practice.  
- Contains a collection of books with titles, prices, ratings, and availability.  
- \*\*Use Case\*\*: Scrape book titles, prices, and ratings.  
  
#### Example URL:  
```plaintext  
http://books.toscrape.com/  
```  
  
---  
  
### 2. \*\*[Quotes to Scrape](http://quotes.toscrape.com/)\*\*  
- Another practice website designed for scraping.  
- Contains quotes, authors, and tags.  
- \*\*Use Case\*\*: Scrape quotes, authors, and tags for text analysis.  
  
#### Example URL:  
```plaintext  
http://quotes.toscrape.com/  
```  
  
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### 3. \*\*[ScraperBox Practice Website](https://scraperbox.com/sample-website/)\*\*  
- A sample website provided by ScraperBox for learning web scraping.  
- Includes product listings, prices, and images.  
- \*\*Use Case\*\*: Scrape product details and images.  
  
#### Example URL:  
```plaintext  
https://scraperbox.com/sample-website/  
```  
  
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### 4. \*\*[Web Scraper Test Sites](https://webscraper.io/test-sites)\*\*  
- A collection of test websites provided by Web Scraper.  
- Includes e-commerce websites with product listings and pricing.  
- \*\*Use Case\*\*: Scrape product names, prices, and categories.  
  
#### Example URL:  
```plaintext  
https://webscraper.io/test-sites/e-commerce/allinone  
```  
  
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### 5. \*\*[OpenWeatherMap (Free API)](https://openweathermap.org/)\*\*  
- Provides weather data via a free API.  
- You can practice scraping or using APIs to fetch weather data.  
- \*\*Use Case\*\*: Scrape weather forecasts for different cities.  
  
#### Example URL:  
```plaintext  
https://openweathermap.org/  
```  
  
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## \*\*Public Websites with Scrape-Friendly Data\*\*  
  
### 6. \*\*[IMDB](https://www.imdb.com/)\*\*  
- A popular website for movie and TV show information.  
- \*\*Use Case\*\*: Scrape movie titles, ratings, and genres.  
- \*\*Note\*\*: Be cautious and respect their terms of service.  
  
#### Example URL:  
```plaintext  
https://www.imdb.com/chart/top/  
```  
  
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### 7. \*\*[Wikipedia](https://www.wikipedia.org/)\*\*  
- A free online encyclopedia with a wealth of information.  
- \*\*Use Case\*\*: Scrape articles, tables, or lists.  
- \*\*Note\*\*: Wikipedia has an API for structured data, which is preferred over scraping.  
  
#### Example URL:  
```plaintext  
https://en.wikipedia.org/wiki/List\_of\_countries\_by\_population\_(United\_Nations)  
```  
  
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### 8. \*\*[Indeed](https://www.indeed.com/)\*\*  
- A job listing website.  
- \*\*Use Case\*\*: Scrape job titles, companies, and locations.  
- \*\*Note\*\*: Be mindful of their terms of service and avoid overloading their servers.  
  
#### Example URL:  
```plaintext  
https://www.indeed.com/jobs?q=python+developer&l=  
```  
  
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### 9. \*\*[Craigslist](https://www.craigslist.org/)\*\*  
- A classifieds website with listings for jobs, housing, and more.  
- \*\*Use Case\*\*: Scrape housing listings, prices, and locations.  
- \*\*Note\*\*: Craigslist has strict anti-scraping measures, so proceed carefully.  
  
#### Example URL:  
```plaintext  
https://newyork.craigslist.org/d/apartments-housing-for-rent/search/apa  
```  
  
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### 10. \*\*[Kaggle Datasets](https://www.kaggle.com/datasets)\*\*  
- While not a website to scrape, Kaggle provides datasets that simulate scraping scenarios.  
- \*\*Use Case\*\*: Practice data cleaning and analysis on pre-scraped datasets.  
  
#### Example URL:  
```plaintext  
https://www.kaggle.com/datasets  
```  
  
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## \*\*APIs for Practice\*\*  
If you want to practice working with APIs (an alternative to scraping):  
1. \*\*[JSONPlaceholder](https://jsonplaceholder.typicode.com/)\*\*: A fake online REST API for testing and prototyping.  
2. \*\*[Open Library API](https://openlibrary.org/developers/api)\*\*: Access book data from the Open Library.  
3. \*\*[The Movie Database (TMDB)](https://www.themoviedb.org/documentation/api)\*\*: Fetch movie and TV show data.  
  
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## \*\*Tips for Practicing Web Scraping\*\*  
1. \*\*Start Small\*\*: Begin with simple websites like "Books to Scrape" or "Quotes to Scrape."  
2. \*\*Respect Website Rules\*\*: Always check the `robots.txt` file of the website.  
 - Example: `https://example.com/robots.txt`  
3. \*\*Use Headers\*\*: Mimic a browser by adding headers to your requests.  
4. \*\*Avoid Overloading Servers\*\*: Use delays between requests (e.g., `time.sleep(1)`).  
5. \*\*Handle Errors Gracefully\*\*: Use try-except blocks to handle HTTP errors.  
  
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Let me know if you'd like to see specific examples for scraping any of these websites!

some blogging websites for scraping

Searching the web

- websites for practicing web scraping blogging sites  
- some blogging websites for scraping

Analyzing Results

- [The Easiest Websites to Practice Web Scraping | Medium](https://medium.com/@spaw.co/best-websites-to-practice-web-scraping-9df5d4df4d1) (Web Search Result)  
 Explore top platforms to master web scraping skills. Dive into detailed insights on sites like HTTPBin, Toscrape, and more.  
  
- [The Best Websites to Scrape: Practice Your Skills - Proxyway](https://proxyway.com/guides/best-websites-to-practice-your-web-scraping-skills) (Web Search Result)  
 Toscrape is a web scraping sandbox, ideal for both beginners and advanced scrapers. The website is divided into two parts. The first is a fictional bookstore that offers thousands of books to scrape. The second lists quotes from famous people. It’s one of the most popular websites to scrape and try out your web scraping tools.  
  
- [THE 8 BEST Websites to Practice Web Scraping - JC Chouinard](https://www.jcchouinard.com/best-websites-for-web-scraping/) (Web Search Result)  
 When practicing web scraping, find a good playground for improving your scraping techniques. Web scraping puts a load on a website’s server and can even come in violation with GDPR. In this tutorial, I will show you the websites that I like best when practicing web scraping. Here is a list of websites to practice web scraping:  
  
- [45 Best Web Scraping Blogs and Websites in 2024 - Feedspot](https://blog.feedspot.com/web\_scraping\_blogs/) (Web Search Result)  
 45 Best Web Scraping Blogs ⋅ 1. ScrapeHero ⋅ 2. ScrapingBee Blog ⋅ 3. Apify Blog ⋅ 4. Bright Data Blog ⋅ 5. ScraperAPI Blog ⋅ 6. PromptCloud » Web Scraping ⋅ 7. SerpApi Blog ⋅ 8. ScrapingAnt Blog  
  
- [10 Most Popular Websites for Web Scraping | Octoparse](https://www.octoparse.com/blog/top-10-most-scraped-websites) (Web Search Result)  
 Blog. Web Scraping. Top 10 Most Scraped Websites in 2025. Ansel Barrett. 2024-07-02T00:00:00+00:00. 8 min read. Categories of Scrapable Websites. E-commerce sites; ... Web scraping is also widely used for price comparison, and this is how smart people build price comparison sites to service the public. If you try, you may build a price ...  
  
- [THE 8 BEST Websites to Practice Web Scraping - JC Chouinard](https://www.jcchouinard.com/best-websites-for-web-scraping/) (Web Search Result)  
 1. ScrapeThisSite (scrapethissite.com) ⭐⭐⭐⭐⭐. ScrapeThisSite stands out because it provides a well-structured collection of websites with some web scraping challenges. You can navigate through different categories and scrape varying types. The website is both simple and rich.  
  
- [Learn Web Scraping | Scrape This Site | A public sandbox for learning ...](https://www.scrapethissite.com/pages/) (Web Search Result)  
 Here are some practice pages you can scrape. Scrape This Site Sandbox Lessons FAQ Login Web Scraping Sandbox. Countries of the World: A Simple Example. A single page that lists information about all the countries in the world. Good for those just get started with web scraping. ...  
  
- [Test Sites - Web Scraper](https://webscraper.io/test-sites) (Web Search Result)  
 Here are some sites that you can use for training while learning how to use the Web Scraper.  
  
- [Top 30 Most Scraped Websites in 2024 - Hexomatic](https://hexomatic.com/academy/2023/10/16/top-30-most-scraped-websites-in-2023/) (Web Search Result)  
 Some of our users are actually eBay sellers who use our scraping tools to collect data from their competitors. They are also scraping other eCommerce platforms for in-depth market research. 10. Tripadvisor- Best website to scrape hospitality industry data ... Is web scraping expensive? No, web scraping is not expensive at all. You can browse ...  
  
- [Top 6 Websites to Practice and Perfect Your Web Scraping Skills](https://geonode.com/blog/practice-your-web-scraping) (Web Search Result)  
 This site provides a range of challenges that mimic real-world scenarios, making it one of the best web scraper practice sites for those looking to use web scraping professionally. Pros: Free to use (you can, however, subscribe to a paid web scraping course) Real-world challenges; Suitable for all skill levels; Cons: Requires account creation

If you're looking for blogging websites to practice web scraping, here are some options that are either designed for practice or have publicly available data. Always ensure you follow ethical guidelines and check the website's terms of service before scraping.  
  
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### \*\*1. Medium\*\*  
- \*\*Description\*\*: Medium is a popular blogging platform with articles on various topics.  
- \*\*Use Case\*\*: Scrape blog titles, authors, publication dates, and tags.  
- \*\*Challenges\*\*: Medium uses dynamic content loading, so you may need tools like Selenium or Puppeteer.  
- \*\*URL\*\*: [https://medium.com](https://medium.com)  
  
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### \*\*2. WordPress Blogs\*\*  
- \*\*Description\*\*: Many blogs are hosted on WordPress, and you can find public blogs to scrape.  
- \*\*Use Case\*\*: Scrape blog titles, categories, and comments.  
- \*\*Example Practice Site\*\*: [https://realpython.github.io/fake-jobs/](https://realpython.github.io/fake-jobs/) (a fake WordPress blog for practice).  
  
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### \*\*3. Blogger (Blogspot)\*\*  
- \*\*Description\*\*: Google's blogging platform with a variety of public blogs.  
- \*\*Use Case\*\*: Scrape blog post titles, authors, and publication dates.  
- \*\*URL\*\*: [https://www.blogger.com](https://www.blogger.com)  
  
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### \*\*4. Quotes to Scrape\*\*  
- \*\*Description\*\*: A practice website designed for web scraping, featuring quotes and authors.  
- \*\*Use Case\*\*: Scrape quotes, authors, and tags.  
- \*\*URL\*\*: [http://quotes.toscrape.com/](http://quotes.toscrape.com/)  
  
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### \*\*5. Dev.to\*\*  
- \*\*Description\*\*: A blogging platform for developers with articles on programming and technology.  
- \*\*Use Case\*\*: Scrape blog titles, tags, and author information.  
- \*\*URL\*\*: [https://dev.to](https://dev.to)  
  
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### \*\*6. ScrapeThisSite\*\*  
- \*\*Description\*\*: A sandbox website for practicing web scraping with various datasets, including blog-like content.  
- \*\*Use Case\*\*: Scrape articles, titles, and metadata.  
- \*\*URL\*\*: [https://www.scrapethissite.com/](https://www.scrapethissite.com/)  
  
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### \*\*7. Feedspot Blog Lists\*\*  
- \*\*Description\*\*: Feedspot curates lists of blogs in various niches.  
- \*\*Use Case\*\*: Scrape blog names, URLs, and descriptions from their lists.  
- \*\*URL\*\*: [https://blog.feedspot.com/](https://blog.feedspot.com/)  
  
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### \*\*8. Hashnode\*\*  
- \*\*Description\*\*: A blogging platform for developers and tech enthusiasts.  
- \*\*Use Case\*\*: Scrape blog titles, tags, and author profiles.  
- \*\*URL\*\*: [https://hashnode.com](https://hashnode.com)  
  
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### \*\*9. Tumblr\*\*  
- \*\*Description\*\*: A microblogging platform with a mix of text, images, and multimedia content.  
- \*\*Use Case\*\*: Scrape blog titles, tags, and post content.  
- \*\*URL\*\*: [https://www.tumblr.com](https://www.tumblr.com)  
  
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### \*\*10. Substack\*\*  
- \*\*Description\*\*: A platform for independent writers and bloggers to publish newsletters and articles.  
- \*\*Use Case\*\*: Scrape blog titles, authors, and publication dates.  
- \*\*URL\*\*: [https://substack.com](https://substack.com)  
  
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### \*\*11. Reddit (Blogging Subreddits)\*\*  
- \*\*Description\*\*: Subreddits like r/blogging or r/writing often feature blog posts and discussions.  
- \*\*Use Case\*\*: Scrape post titles, comments, and upvotes.  
- \*\*URL\*\*: [https://www.reddit.com/r/blogging/](https://www.reddit.com/r/blogging/)  
  
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### \*\*12. Web Scraper Test Sites\*\*  
- \*\*Description\*\*: Websites designed for web scraping practice, including blog-like content.  
- \*\*Use Case\*\*: Scrape articles, titles, and metadata.  
- \*\*URL\*\*: [https://webscraper.io/test-sites](https://webscraper.io/test-sites)  
  
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### \*\*Tips for Scraping Blogging Websites\*\*  
1. \*\*Check `robots.txt`\*\*: Always check the website's `robots.txt` file to see what is allowed for scraping.  
 - Example: `https://example.com/robots.txt`  
2. \*\*Use Headers\*\*: Mimic a browser by adding headers to your requests.

headers = {  
 "User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/91.0.4472.124 Safari/537.36"  
}

3. \*\*Handle Pagination\*\*: Many blogs use pagination for multiple pages of content.  
4. \*\*Respect Rate Limits\*\*: Avoid overloading servers by adding delays between requests (e.g., `time.sleep(1)`).  
  
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Let me know if you'd like specific examples or code snippets for scraping any of these websites!