* Exploring Web Scraping with …
  + Python web scraping packages
  + Automated http to download data
  + Ways to select exact data to extract
  + Chrome developer tools and Jupyter lab
  + Build a spider
* How Web Scarping is Useful
  + Profit: web scraping business model
  + Data is locked inside the web
  + If there is an api to access data it is the better choice
    - But if there isn’t, web scraping is useful
* Web Scraping Examples
* Scraping for a Car
  + Web Scraping Python Libraries
    - Beautiful soup
    - Scrapy
    - Selenium
* Human Browsing Versus Web..
  + Human/Broswer
    - Enter a url or click a bookmark
    - Download html
    - Parse html and render
    - Review for useful information
    - Interpret
    - Remember the information
    - Click a link-enter another url
  + Web Scraper
    - Set a start\_url
    - Download html
    - Parse html
    - Extract useful information
    - Transform or Aggregate
    - Save the data
    - Go to the next url
* HTTP Overview
  + Request message and response message
  + Hyper-Text Transfer Protocol(HTTP) is the protocol that powers the web
    - HTTPS is encrypted http
  + HTTP Request
    - Web address or url
    - A verb
    - User agent
  + HTTP Request: Verb
    - GET: retrieves data
    - POST: sends data to the server
  + HTTP Request: User Agent
    - Identifies the browser or web scraper
* URL Hacking
  + Scheme
    - https://
  + Host
    - [www.iseecars.com](http://www.iseecars.com)
  + Port
    - :443
  + Path
    - /used-cars/used-tesla-for-sale
  + Query String(?) or URL Fragment(#)
    - #Location=66952&Radius=all…
  + Python f strings
    - f’Location={location}’
  + example of scraping
    - import request
    - start\_url = ‘https://www.iseecars.com/used-cars/used-tesla-for-sale’
    - download\_page = requests.get(start\_url)
    - print(downloaded\_page.text)
* HTML & CSS Selectors
  + Html & css selectors
  + XPath
  + Chrome developer tools
* XPath
  + //: look anywhere
  + Ex: ‘//ul[@class=”listings”]/li[@id=”vin3827”]’
  + XPath or CSS Selector
    - Either or
* Chrome Developer Tools
  + Control-Shift-C
* Is Web Scraping Legal? Is it Et..
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