

1. What is the problem?
 - Javascript generated sites.
 - i. Final content of visible page significantly different than page source of initial request.
 - ii. Cannot navigate via URL updates (page always remains the same)
 - Menu navigation
 - next/prev page navigation
 - Button clicks
 - iii. Interstitial popups breaking flow of scraping.
 - iv. captchas (too complicated for a short seminar, can be dealt with though).
 - v. Desired options not available (javascript injection).
2. What is the solution?
 - Using a javascript aware process to scrape.
 - i. “Headless” browsing session.
 - Simulating a “real” user.
3. Selenium
 - <https://www.seleniumhq.org/>
 - *Selenium automates browsers.* That's it! What you do with that power is entirely up to you. Primarily, it is for automating web applications for testing purposes, but is certainly not limited to just that. Boring web-based administration tasks can (and should!) be automated as well.
 - seleniumIDE
 - i. <https://www.seleniumhq.org/selenium-ide/>
 - ii.
4. Install Docker Desktop
 - <https://www.docker.com/products/docker-desktop>
5. Install Kitematic
 - <https://github.com/docker/kitematic/releases>
6. Run Kitematic
 - Select standalone-chrome-debug
 - Update Settings for container
 - i. Hostname: scraper
 - ii. Ports

Docker Port	Published IP:Port
4444	localhost:4445
5900	localhost:5901
 - iii. .
 - .
7. Test R connection.

- rseleniumtest.R

8. Install VNC Viewer From RealVNC