



OLD DOMINION UNIVERSITY

CS 432 WEB SCIENCE

Assignment One

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Professor

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1 POST to a form with curl

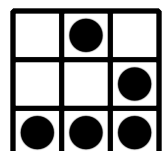
In order to submit POST data to a form using `curl` first it must be ensured that the form accepts POST data. This can be done by viewing the page source and verifying that the form tag has `method="post"` as in the nostarch.com search bar form tag shown somewhat abridged below.

```
<form action="/" method="post" id="search-theme-form">
<input name="search_theme_form" value="" class="form-text"/>
<input name="op" value="Search" class="form-submit"/>
<input type="hidden" name="form_build_id" value="form-6Skwd"/>
<input type="hidden" name="form_id" value="search_theme_form"/>
</form>
```

In order to craft the `curl` command the `-d` flag can be used along with the `"name=value"` pattern for each input to the form where `name` is copied from each input tag and `value` is changed in the fields where the default values are not desired.

```
curl -L -i -o results.html \
    -d "search_theme_form=$1" \
    -d "op=Search" \
    -d "form_build_id=form-6SkwdjCka872mUD0LyJspWzIHtkBGso7f5RMZ2fGr9U" \
    -d "form_id=search_theme_form" \
    https://www.nostarch.com/
```

The command `curl_post.sh car` will return a page with the search results for "car" on nostarch.com. Inspecting the output `results.html` the HTTP/1.1 200 OK after a single redirect and lack of a 405 Method not allowed error means the request was successful.



Search | No Starch Press

file:///home/datenstrom/workspace/cs532-s17/assignments/assignment_one/ctSuchen

HTTP/1.1 302 Moved Temporarily Date: Sun, 22 Jan 2017 05:25:38 GMT Content-Type: text/html; charset=utf-8 Transfer-Encoding: chunked Connection: keep-alive Set-Cookie: __cfduid=d12d05d49dd5a2620f839ba1f652b1b161485062738; expires=Mon, 22-Jan-18 05:25:38 GMT; path=/; domain=.nostarch.com; HttpOnly X-Powered-By: PHP/5.2.17 Expires: Sun, 19 Nov 1978 05:00:00 GMT Cache-Control: store, no-cache, must-revalidate, post-check=0, pre-check=0 Set-Cookie: SESS1ff143602f7518d305560cea1fca05f6=08c621a968633fd6cef8ace9d57d603b; expires=Tue, 14-Feb-2017 08:58:58 GMT; path=/; domain=.nostarch.com Last-Modified: Sun, 22 Jan 2017 05:25:38 GMT Location: https://www.nostarch.com/search/node/car Server: cloudflare-nginx CF-RAY: 32509624cee02432-IAD HTTP/1.1 200 OK Date: Sun, 22 Jan 2017 05:25:38 GMT Content-Type: text/html; charset=utf-8 Transfer-Encoding: chunked Connection: keep-alive Set-Cookie: __cfduid=d12d05d49dd5a2620f839ba1f652b1b161485062738; expires=Mon, 22-Jan-18 05:25:38 GMT; path=/; domain=.nostarch.com; HttpOnly X-Powered-By: PHP/5.2.17 Expires: Sun, 19 Nov 1978 05:00:00 GMT Cache-Control: must-revalidate Set-Cookie: SESS1ff143602f7518d305560cea1fca05f6=d9cc6715f497a720833d02b1f190a234; expires=Tue, 14-Feb-2017 08:58:58 GMT; path=/; domain=.nostarch.com Last-Modified: Sun, 22 Jan 2017 05:16:27 GMT Server: cloudflare-nginx CF-RAY: 325096263f802432-IAD

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Only of the type(s):

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Car Hacker's Handbook

... and OpenGarages.org. Craig is a frequent speaker on **car** hacking and has run workshops at RSA, DEF CON, and other major security ... needs more hackers, and the world definitely needs more **car** hackers. We're all safer when the systems we depend upon are inspectable, ...

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DATENSTROM.GITLAB.IO/INDEX

2 A Python program that finds PDFs

The Common House Spider can take any number of URIs as input optionally from a specified file with the `-f` flag, and use multiple threads using the `-t` flag. It outputs all PDF URIs on the page and the PDF size as reported by the server. Note that the `-u` or `--ugly` parameter must be passed to print first and last URI.

```
datenstrom@redacted$ python cli.py -t 2 www.nostarch.com/carhacking https://www.nostarch.com/blackhatpython -u
```

```
[*] Crawling pages:
```

```
www.nostarch.com/carhacking
```

```
https://www.nostarch.com/blackhatpython
```

```
[*] Spinning up with 2 threads
```

```
[*] Thread 1 discovered 3 PDF links for https://www.nostarch.com/blackhatpython
```

```
[*] Thread 1 removed 0 duplicate PDF files
```

```
First link: http://www.nostarch.com/download/BlackHatPython_ch07.pdf
```

```
Last link: https://www.nostarch.com/download/BlackHatPython_ch07.pdf
```

```
PDF size: 88339
```

```
First link: http://www.nostarch.com/download/BlackHatPython_dTOC.pdf
```

```
Last link: https://www.nostarch.com/download/BlackHatPython_dTOC.pdf
```

```
PDF size: 54377
```

```
First link: http://www.nostarch.com/download/BlackHatPython_Index.pdf
```

```
Last link: https://www.nostarch.com/download/BlackHatPython_Index.pdf
```

```
PDF size: 116530
```

```
[*] Thread 0 discovered 5 PDF links for www.nostarch.com/carhacking
```

```
[*] Thread 0 removed 1 duplicate PDF file
```

```
First link: http://www.nostarch.com/download/Car Hackers Handbook_sample_Chapter5.pdf
```

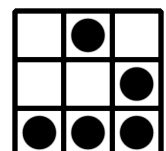
```
Last link: https://www.nostarch.com/download/Car%20Hackers%20Handbook_sample_Chapter5.pdf
```

```
PDF size: 1713557
```

```
First link: http://www.nostarch.com/download/Car Hackers Handbook_sample_Chapter5.pdf
```

```
Last link: https://www.nostarch.com/download/Car%20Hackers%20Handbook_sample_Chapter5.pdf
```

```
PDF size: 1713557
```



First link: http://www.nostarch.com/download/Car Hackers Handbook_sample_dT0C.pdf
Last link: https://www.nostarch.com/download/Car%20Hackers%20Handbook_sample_dT0C.pdf
PDF size: 594880

First link: http://www.nostarch.com/download/Car Hackers Handbook_sample_index.pdf
Last link: https://www.nostarch.com/download/Car%20Hackers%20Handbook_sample_index.pdf
PDF size: 660045

First link: https://www.usenix.org/system/files/login/articles/login_summer16_19_books.pdf
Last link: https://www.usenix.org/system/files/login/articles/login_summer16_19_books.pdf
PDF size: 81289

[*] PDF links discovered in 20.1669859409 seconds

It is also both Python 2.6+ and Python 3 compatible:

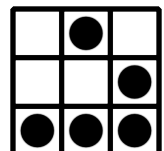
```
datenstrom@redacted$ python3 cli.py http://www.cs.odu.edu/~mln/teaching/cs532-s17/test/pdfs.html -u
[*] Crawling pages:
http://www.cs.odu.edu/~mln/teaching/cs532-s17/test/pdfs.html
[*] Spinning up with 1 thread
[*] Thread 0 discovered 11 PDF links for http://www.cs.odu.edu/~mln/teaching/cs532-s17/test/pdfs.html
[*] Thread 0 removed 0 duplicate PDF files

[*] Thread 0 discovered 11 PDF links for http://www.cs.odu.edu/~mln/teaching/cs532-s17/test/pdfs.html
[*] Thread 0 removed 0 duplicate PDF files
```

First link: <http://www.cs.odu.edu/~mln/pubs/ht-2015/hypertext-2015-temporal-violations.pdf>
Last link: <http://www.cs.odu.edu/~mln/pubs/ht-2015/hypertext-2015-temporal-violations.pdf>
PDF size: 2184076

First link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-annotations.pdf>
Last link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-annotations.pdf>
PDF size: 622981

First link: <http://arxiv.org/pdf/1512.06195>
Last link: <https://arxiv.org/pdf/1512.06195.pdf>
PDF size: 1748961



First link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-off-topic.pdf>

Last link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-off-topic.pdf>

PDF size: [4308768](#)

First link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-stories.pdf>

Last link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-stories.pdf>

PDF size: [1274604](#)

First link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-profiling.pdf>

Last link: <http://www.cs.odu.edu/~mln/pubs/tpdl-2015/tpdl-2015-profiling.pdf>

PDF size: [639001](#)

First link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2014/jcdl-2014-brunelle-damage.pdf>

Last link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2014/jcdl-2014-brunelle-damage.pdf>

PDF size: [2205546](#)

First link: <http://bit.ly/1ZDatNK>

Last link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2015/jcdl-2015-temporal-intention.pdf>

PDF size: [720476](#)

First link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2015/jcdl-2015-mink.pdf>

Last link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2015/jcdl-2015-mink.pdf>

PDF size: [1254605](#)

First link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2015/jcdl-2015-arabic-sites.pdf>

Last link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2015/jcdl-2015-arabic-sites.pdf>

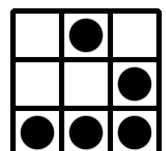
PDF size: [709420](#)

First link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2015/jcdl-2015-dictionary.pdf>

Last link: <http://www.cs.odu.edu/~mln/pubs/jcdl-2015/jcdl-2015-dictionary.pdf>

PDF size: [2350603](#)

[*] PDF links discovered in [14.306671047210693](#) seconds

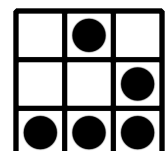
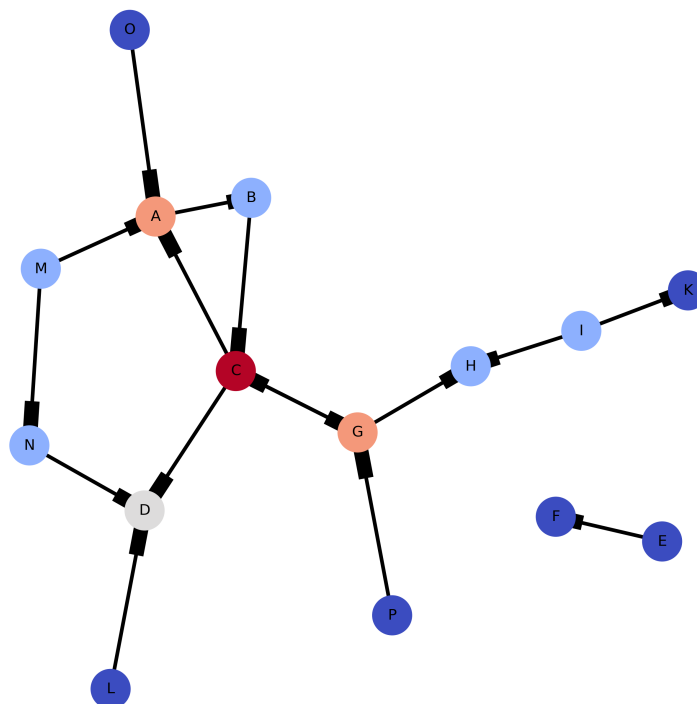


3 Graph Structure

The sample graph below is the dataset that will be used to demonstrate the **SCC**, **IN**, **OUT**, **DISCONNECTED**, **TUBES**, and **TENDRILS** components. The heatmap in figure one is based on the degree for each node. Using this directed graph the single **SCC** component can be found, it contains all of the nodes which are reachable from eachother. In this sample graph these nodes are **A**, **B**, **C**, and **G** which are color coded red in figure 2.

Once the **SCC** has been discovered, the **IN** and **OUT** components can be found. These consist of the nodes that link only into or out of the **SCC** respectively. The **IN** component consists of nodes **O**, **M**, and **P** which are colored green in figure 2. The **OUT** components are **H** and **D**, yellow in figure 2.

Figure 1: Graph heatmap by node degree



The **DISCONNECTED** component contains all nodes unreachable from the other components, which are the grey nodes F and E. **TUBES** are nodes which connect **IN** and **OUT** nodes, there is only one node in this example N colored purple. Finally the **TENDRILS** are the blue nodes I, K, and L which shoot off of the **IN** and **OUT** components but do not directly interact with the **SCC**.

Component	Color	Nodes
SCC	red	4
IN	green	3
OUT	yellow	2
TENDRILS	blue	3
TUBES	purple	1
DISCONNECTED	grey	2

Figure 2: Graph components

