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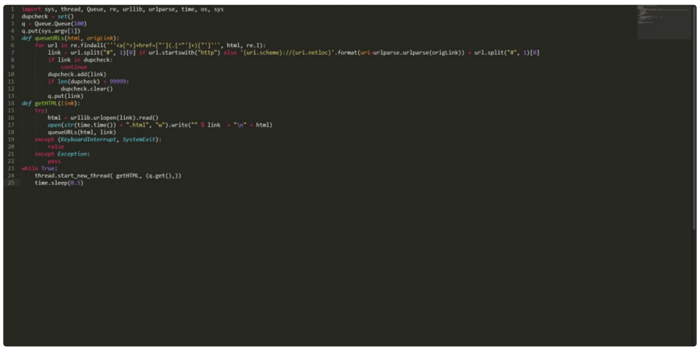
How to Build a Basic Web Crawler in Python

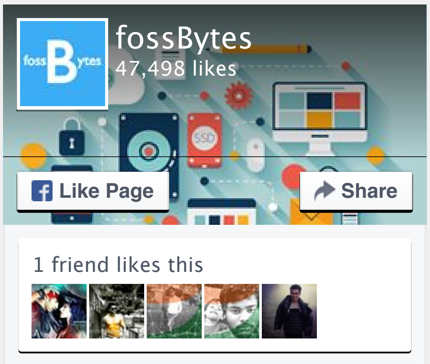
BY ANANDA VERMA · AUGUST 13, 2015



```
import sys, thread, Queue, re, urllib, urlparse, time, os, sys
dupcheck = set()
q = Queue.Queue(100)
q.put(sys.argv[1])
def queueURLs(html, origLink):
    for url in re.findall('''<a[^>]+href=["'](.[^"']+)["']''', html, re.I):
        link = url.split("#", 1)[0] if url.startswith("http") else '{uri.scheme}://{uri.netloc}'.format(uri=urlparse.urlparse(origLink)) + url.split("#", 1)[0]
        if link in dupcheck:
            continue
        dupcheck.add(link)
        if len(dupcheck) > 99999:
            dupcheck.clear()
        q.put(link)
def getHTML(link):
    try:
        html = urllib.urlopen(link).read()
        open(str(time.time()) + ".html", "w").write("" % link  + "\n" + html)
        queueURLs(html, link)
    except (KeyboardInterrupt, SystemExit):
        raise
    except Exception:
        pass
while True:
    thread.start_new_thread( getHTML, (q.get(),))
    time.sleep(0.5)
```

***Short Bytes:** Web crawler is a program that browses the Internet (World Wide Web) in a predetermined, configurable and automated manner and performs given action on crawled content. Search engines like Google and Yahoo use spidering as a means of providing up-to-date data.*

ebhose.io, a company which provides direct access to live data from



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hundreds of thousands of forums, news and blogs, on Aug 12, 2015, posted the articles describing a tiny, multi-threaded web crawler written in python. This python web crawler is capable of crawling the entire web for you. Ran Geva, the author of this tiny python web crawler says that:

> *I wrote as "Dirty", "Iffy", "Bad", "Not very good". I say, it gets the job done and downloads thousands of pages from multiple pages in a matter of hours. No setup is required, no external imports, just run the following python code with a seed site and sit back (or go do something else because it could take a few hours, or days depending on how much data you need).*

The python based multi-threaded crawler is pretty simple and very fast. It is capable of detecting and eliminating duplicate links and saving both source and link which can later be used in finding inbound and outbound links for calculating page rank. It is completely free and the code is listed below:

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import sys, thread, Queue, re, urllib, ur
dupcheck = set()
q = Queue.Queue(100)
q.put(sys.argv[1])
def queueURLs(html, origLink):
    for url in re.findall('''<a[^>]+href=
```

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```
        link = url.split("#", 1)[0] if ur
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        queueURLs(html, link)
    except (KeyboardInterrupt, SystemExit
        raise
    except Exception:
        pass
while True:
    thread.start_new_thread( getHTML, (q.
    time.sleep(0.5)
```

Save the above code with some name lets say “myPythonCrawler.py”. To start crawling any website just type:

```
$ python myPythonCrawler.py http://fossby
```

Sit back and enjoy this web crawler in python. It will download the entire site for you.

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us know in comments.

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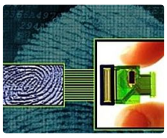

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Ananda Verma

Writes for machines mostly. Sometimes for humans too.

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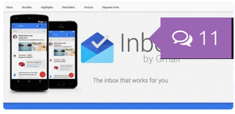
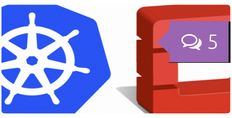
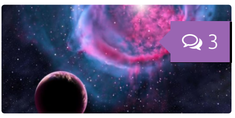

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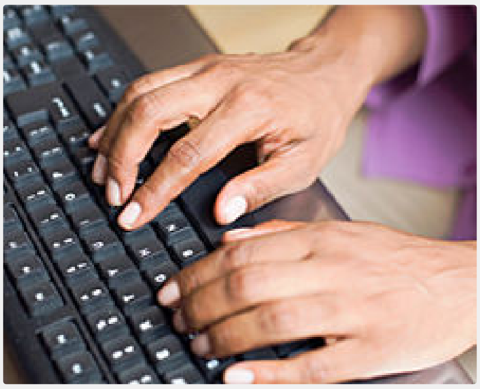

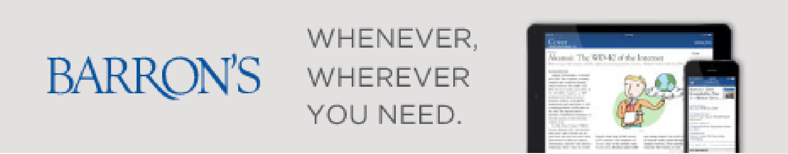

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Jayant Prabhakar · Bharati Vidyapeeth's College Of Engineering,Delhi

interesting material....

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Martin Thugy · California High School

There is a simpler way with less code and 100% working!!!!

Like · Reply · Aug 14, 2015 1:27am

El Cora · Teacher at Escuela Miguel Hidalgo Y Costilla

Very interesting material. Thanks

Like · Reply · Aug 13, 2015 10:13pm

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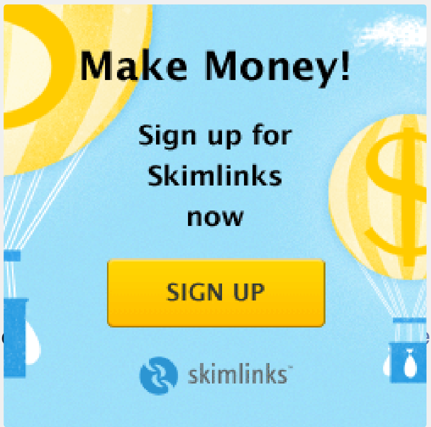
You are welcome 🙂

Like · Reply · Aug 18, 2015 6:06pm



Anas Saeed · Government College Lahore

does not work as it gets stuck in the queueURLs function (here n s.com)

Like · Reply · Aug 13, 2015 2:28pm

Ran Geva · בית ספר הטכני בחיפה

The problem is that FossBytes uses CloudFlare to block crawlers. The first and only file the crawler downloads shows the following error:
Access denied
What happened?

The owner of this website (fossbytes.com) has banned your access based on your browser's signature

Like · Reply · Aug 13, 2015 3:59pm

Inspired Systems

Traceback (most recent call last):
File "pythonCrawler.py", line 1, in <module>
import sys, thread, Queue, re, urllib, urlparse, time, os, sys
ImportError: No module named 'thread'

Like · Reply · Aug 19, 2015 10:07pm

Jess Jukić · Swinburne University of Technology

_thread

Like · Reply · Sep 13, 2015 5:40am

Jean Paul Ruiz

File "web-crawler.py", line 7
link = url.split("#", 1)[0] if url.startswith("http") else '{uri.scheme}://{uri.netloc}'.format(uri=urlparse.urlparse(origLink)) + url.split("#", 1)[0]
^
SyntaxError: invalid syntax

Like · Reply · Aug 13, 2015 11:55pm

Ran Geva · בית ספר הטכני בחיפה

What python version are you using? This condition formatting works on python 2.6+

Like · Reply · Aug 14, 2015 2:48am

Jean Paul Ruiz

Ran Geva That must be the reason, Python 2.4.3. Do you know what would be the old supported format for this piece of code?

Like · Reply · Aug 14, 2015 2:55am

Ran Geva · בית ספר הטכני בחיפה

Jean Paul Ruiz It works since version 2.5:
https://mail.python.org/.../2005-September/056846.html

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