# Hack Nairaland

This is a fun exercise on web scraping.

## What you can do with this notebook

1. Export all comments ever made by a user to an excel file (other formats may be added).
2. Export all post titles from a section within a range that you specify to an excel file (other formats may be added).
3. Get all unique commenters on a post
4. Get all commenters on a post and their comment frequency
5. Save a post permanently by exporting it to word
6. Pick two users and see their discussion thread (to do)

## How to work with this notebook

1. Download or clone the `github`folder
2. Open `cmd.exe` and `cd` (i.e. navigate) into the folder
3. Issue the command `pipenv install`. This step requires that you have `python` and `pipenv` installed in your system

## Creating the environment on your own

1. Create a folder

2. Open `cmd.exe` and `cd` (i.e. navigate) into the folder

3. Issue commands `pipenv install`. Wait for the environment to be created.

4. When environment creation is done, activate it by issuing the command `pipenv shell`

5. After environment activation, issue commands `pipenv install jupyter`, `pipenv install ipykernel`

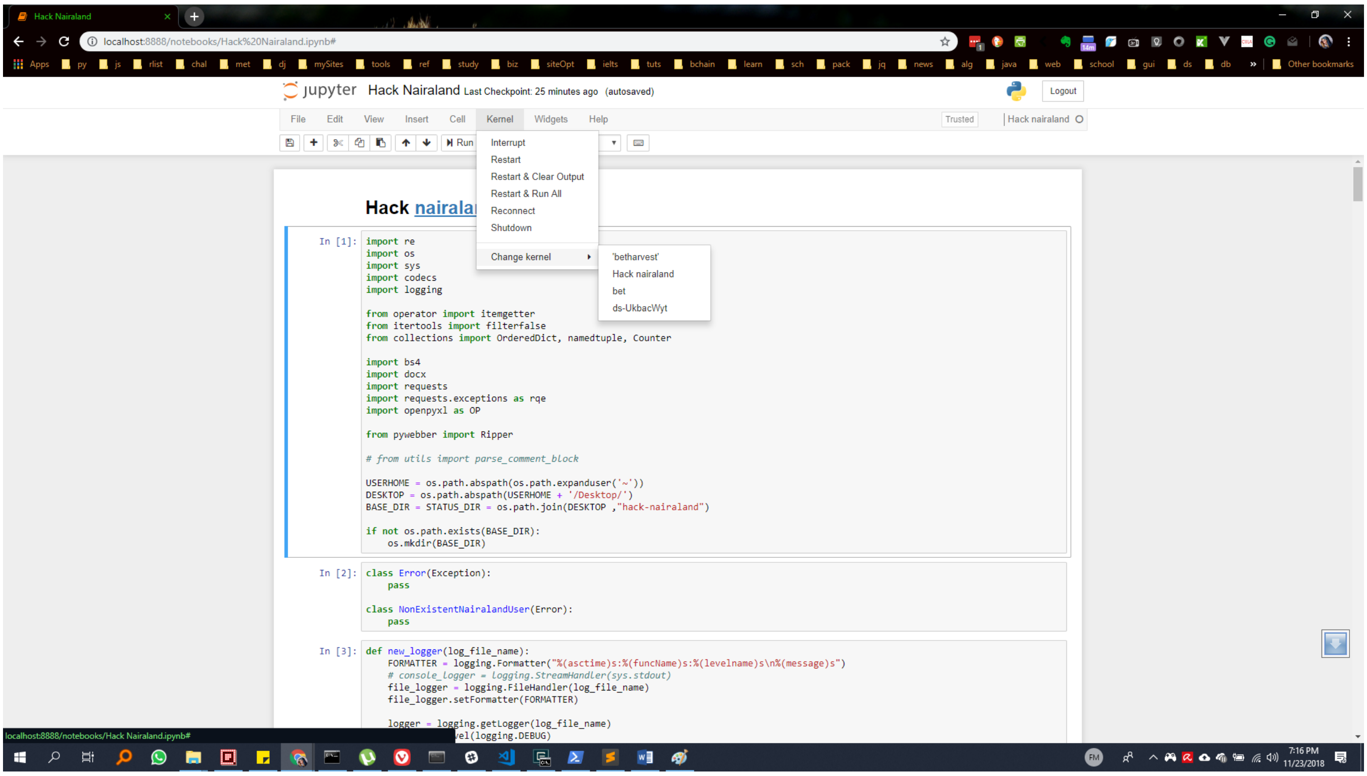
6. To create the custom `ipython` kernel, issue command

   `python -m ipykernel install --user --name other-env --display-name "Hack nairaland"`

   `python -m ipykernel install --user --display-name "Hack nairaland or whatever name you like"`

7. The `--user other-env` argument, value pair is optional. See here for explanation

8. Now when you reload your `ipython/jupyter` notebooks you should see the newly created kernel listed under kernels. You can see mine in the screenshot below.



```
In [1]: import re
        import os
        import sys
        import codecs
        import logging

        from operator import itemgetter
        from itertools import filterfalse
        from collections import OrderedDict, namedtuple, Counter

        import bs4
        import docx
        import requests
        import requests.exceptions as rqe
        import openpyxl as OP

        from pywebber import Ripper

        # from utils import parse_comment_block

        USERHOME = os.path.abspath(os.path.expanduser('~'))
        DESKTOP = os.path.abspath(USERHOME + '/Desktop/')
        BASE_DIR = STATUS_DIR = os.path.join(DESKTOP ,"hack-nairaland")

        if not os.path.exists(BASE_DIR):
            os.mkdir(BASE_DIR)

In [2]: class Error(Exception):
            pass

        class NonExistentNairalandUser(Error):
            pass

In [3]: def new_logger(log_file_name):
            FORMATTER = logging.Formatter("%(asctime)s:%(funcName)s:%(levelname)s\n%(message)s")
            # console_logger = logging.StreamHandler(sys.stdout)
            file_logger = logging.FileHandler(log_file_name)
            file_logger.setFormatter(FORMATTER)

            logger = logging.getLogger(log_file_name)
                        vel(logging.DEBUG)
```

# Data Structures

Every function has its own data structure. They are documented here for easy understanding of the program logic.

## `parse_comment_block`

Returns a namedtuple

```
namedtuple('ParsedComment', ['focus_user_comment', 'quotes_ordered_dictionary'])

# Internal structure
('focus_user_comment', OrderedDict([('moniker', 'comment')]))
```

## `PostCollector()`

This class is used to scrap a nairaland post.

### `PostCollector.scrap_comments_for_page_range()`

Return type of `types.generator`. `Yield`s `OrderedDict()` objects. Where each has structure shown below.

```
OrderedDict(['moniker', parse_comment_block function object])
```

### User `comment header <tr>` structure - Post view

```
<tr>
    <td class="bold l pu">
        <a name="68136427"></a>
        <a name="msg68136427"></a>
        <a name="4539839.6"></a>
        <a href="/4539839/agu-aina-dropped-nigerias-final#68136427">Re:Topic.</a>
        by
        <a href="/moniker" class="user" title="Location: Detroit">moniker</a>
        (
        <span class="m or f">m or f</span>
        ):
        <span class="s">
            <b>00:00am</b>
        </span>
    </td>
</tr>
```

User `comment` `text` `<tr>` structure - Post view

```
<tr>
    <td id="pb68136427" class="l w pd">
        <div class="narrow">
            <blockquote>
                <a href="/post/68136377">
                    <b>moniker</b>
                </a>
                :
                <br>
                comment
            </blockquote>
            <br>
            <br>
            comment
        </div>
        <p class="s">
            <b id="lpt68136427">n Likes </b>
            <b id="shb68136427">n Share</b>
        </p>
    </td>
</tr>
```

## `UserCommentHistory()`

User `comment` `header` `<tr>` structure - Comment history view

```
<tr>
    <td class="bold l pu">
        <a name=""></a>
        <a name=""></a>
        <a name=""></a>
        <img src="">
        <a href="/section-url">Section name</a>
        /
        <a href="/0000/title">Re: Post title</a>
        by
        <a href="/username" class="user" title="Location:location">username</a>
        (
        <span class="m or f">m or f</span>
        ):
        <span class="s">
            <b>00:00pm</b>
            On
            <b>Oct 19</b>
            ,
            <b>2017</b>
        </span>
    </td>
</tr>
```

### User comments text `<tr>` structure - Comment history view

This section has a few other elements if you're logged in

```

<tr>
    <td id="" class="l w pd">
        <div class="narrow">
            <blockquote> <!-- each blockquote represents a quoted comment -->
                <a href="/post/00000000">
                    <b>Moniker</b>
                </a>
                :
                <br> <!-- there'll be as many of these as the number of enter keys a user presses-->
                Some comment
                <img src="" alt="represents an emoticon" border="0" class="faces">
            </blockquote>
            some comment
        </div>
        <p class="s">
            <b id="lpt61581477">n Likes </b>
            <b id="shb61581477">n Share</b>
        </p>
    </td>
</tr>
```

## A supposed anomaly I found in the table

It contains nothing. Just a blank row.

```
<tr>
    <td class="l pu pd">
        <a name="68130046"></a>
    </td>
</tr>
```

### Unpacking user comments history

```
import textwrap

user = UserCommentHistory("preccy69")
for page in list(user.scrap_comments_for_page_range(start=0, stop=1)):
    for section, topic_plus_comment in page.items():
        print("\n\n", "*"*40, section, "*"*40)
        print(topic_plus_comment.topic.upper()) # for differentiation only

        parsed_comment = topic_plus_comment.parsed_comment # a namedtuple instance
        print(parsed_comment.focus_user_comment)

        quotes = parsed_comment.quotes_ordered_dict
        for username, comment in quotes.items():
            print(" "*8)
            print(textwrap.indent(username, "    "))
            print(textwrap.indent(comment, "    "))
        print("_"*100)
    print("\n\n")
```

## TopicCollector()

### Section topics `<tr>` structure

```
<tr>
    <td id="top2792995" class="w">
        <a name="2792995"></a>
        <img src="/icons/sticky.gif">
        <b>
            <a href="/2792995/nairaland-says-no-secessionists">Nairaland Says No
To Secessionists</a>
        </b>
        <a href="topic-full-url/1">(1)</a>
        <a href="topic-full-url/2">(2)</a>
        <a href="topic-full-url/max-page">(max-page)</a>
        <img src="/icons/new.gif">
        <b>*</b>
        <br>
        <span class="s">
```

```
            by
            <b>
                <a href="/username">username</a>
            </b>
            .
            <b>number of comments</b>
            posts &amp;
            <b>number of views</b>
            views.
            <b>00:00am</b>
            On
            <b>Jun 03</b> <!-- Visible for posts older than current date -->
            <b>2015</b> <!-- Visible for posts older than current year -->
            (
            <b>
                <a href="/donchris921">Donchris921</a>
            </b>
            )
        </span>
    </td>
</tr>
```

### Unpacking Topics

```
import textwrap
p = TopicCollector(section='politics')
for page in p.scrap_topics_for_range_of_pages(end=1):
    for topic in list(page):
        print(topic.poster)
        print(textwrap.indent(topic.title, "    "))
        print(textwrap.indent(topic.url, "    "))
        print(textwrap.indent(str(topic.comments), "    "), " comments")
        print()
```