22-01-24-lab3

January 22, 2024

[1]: import matplotlib.pyplot as plt

```
import numpy as np
     import pandas as pd
[3]: from urllib.request import urlopen
     url = "https://matplotlib.org/cheatsheets/"
     page = urlopen(url)
     html_bytes = page.read()
     html_bytes.decode("utf-8")
[3]: '\n<!DOCTYPE html>\n<html>\n<head>\n<meta charset="utf-8" />\n<meta
    name="viewport" content="width=device-width, initial-scale=1.0" /><meta
     name="generator" content="Docutils 0.17.1: http://docutils.sourceforge.net/"
     />\n<title>Matplotlib cheatsheets &#8212; Visualization with
    Python</title>\n<link
    href="_static/styles/theme.css?digest=1999514e3f237ded88cf"
     rel="stylesheet">\n<link href="_static/styles/pydata-sphinx-
     theme.css?digest=1999514e3f237ded88cf" rel="stylesheet">\n<link rel="stylesheet"
    href="_static/vendor/fontawesome/5.13.0/css/all.min.css">\n<link rel="preload"
     as="font" type="font/woff2" crossorigin
    href="_static/vendor/fontawesome/5.13.0/webfonts/fa-solid-900.woff2">\n<link
     rel="preload" as="font" type="font/woff2" crossorigin
    href="_static/vendor/fontawesome/5.13.0/webfonts/fa-brands-400.woff2">\nlink
     rel="stylesheet" type="text/css" href="_static/pygments.css" />\n<link
     rel="stylesheet" type="text/css" href="_static/css/style.css" />\n<link
     rel="stylesheet" type="text/css" href="_static/css/normalize.css" />\n<link
     rel="stylesheet" type="text/css" href=" static/css/landing.css" />\n<link
     rel="preload" as="script" href="_static/scripts/pydata-sphinx-
     theme.js?digest=1999514e3f237ded88cf">\n<script data-url_root="./"
     id="documentation options"
     src="_static/documentation_options.js"></script>\n<script</pre>
     src="_static/jquery.js"></script>\n<script</pre>
     src="_static/underscore.js"></script>\n<script</pre>
     src="_static/doctools.js"></script>\n<link rel="shortcut icon"</pre>
     href="_static/favicon.ico" />\n<link rel="index" title="Index"
    href="genindex.html" />\n<link rel="search" title="Search" href="search.html"</pre>
     />\n<meta name="viewport" content="width=device-width, initial-scale=1"
```

```
/>\n<meta name="docsearch:language" content="None">\n\n</head>\n<body data-
spy="scroll" data-target="#bd-toc-nav" data-offset="80">\n<div class="container-
fluid" id="banner"></div>\n<nav class="navbar navbar-light navbar-expand-lg bg-
light fixed-top bd-navbar" id="navbar-main"><div class="container-xl">\n<div
id="navbar-start">\n<a class="navbar-brand"</pre>
href="https://matplotlib.org/stable/">\n<img src="_static/images/logo2.svg"
class="logo" alt="logo">\n</a>\n</div>\n<button class="navbar-toggler"
type="button" data-toggle="collapse" data-target="#navbar-collapsible" aria-
controls="navbar-collapsible" aria-expanded="false" aria-label="Toggle
navigation">\n<span class="navbar-toggler-icon"></span>\n</button>\n<div
id="navbar-collapsible" class="col-lg-9 collapse navbar-collapse">\n<div
id="navbar-center" class="mr-auto">\n<div class="navbar-center-item">\n<ul
id="navbar-main-elements" class="navbar-nav">\n\n<a
class="reference internal nav-link"
href="https://matplotlib.org/stable/plot_types/index">Plot types</a>\n
class="nav-item">\n<a class="reference internal nav-link"</pre>
href="https://matplotlib.org/stable/gallery/index">Examples</a>\n\n<li
class="nav-item">\n<a class="reference internal nav-link"</pre>
href="https://matplotlib.org/stable/tutorials/index">Tutorials</a>\n\n1i>\n
class="nav-item">\n<a class="reference internal nav-link"</pre>
href="https://matplotlib.org/stable/api/index">Reference</a>\n
class="nav-item">\n<a class="reference internal nav-link"</pre>
href="https://matplotlib.org/stable/users/index">Usage guide</a>\n\n<li
class="nav-item">\n<a class="reference internal nav-link"</pre>
href="https://matplotlib.org/stable/devel/index">Develop</a>\n\n<li
class="nav-item">\n<a class="reference internal nav-link"</pre>
href="https://matplotlib.org/stable/users/release notes">Release
notes</a>\n\n</div>\n</div>\n<div id="navbar-end">\n<div
class="navbar-end-item">\n<ul id="navbar-icon-links" class="navbar-nav" aria-
label="Icon Links">\n\n<a class="nav-link"</pre>
href="https://gitter.im/matplotlib" rel="noopener" target="_blank"
title="gitter">\n<span><i class="fab fa-gitter"></i></span>\n<label class="sr-
only">gitter</label>\n</a>\n\nclass="nav-item">\n<a class="nav-link"
href="https://discourse.matplotlib.org" rel="noopener" target="_blank"
title="discourse">\n<span><i class="fab fa-discourse"></i></span>\n<label
class="sr-only">discourse</label>\\n</a>\\n\li class="nav-item">\\n<a
class="nav-link" href="https://github.com/matplotlib/matplotlib" rel="noopener"
target="_blank" title="GitHub">\n<span><i class="fab fa-github-
square"></i></span>\n<label class="sr-only">GitHub</label>\n</a>\n\n<li
class="nav-item">\n<a class="nav-link" href="https://twitter.com/matplotlib/"
rel="noopener" target="_blank" title="twitter">\n<span><i class="fab fa-twitter-
square"></i></span>\n<label class="sr-only">twitter</label>\n</a>\n\n
n</div>\n</div>\n</div>\n</div>\n</div
class="row">\n<div class="col-12 col-md-1 col-xl-2 bd-sidebar no-
sidebar"></div>\n<div class="d-none d-xl-block col-x1-2 bd-toc">\n<div
class="toc-item">\n<div class="tocsection onthispage pt-5 pb-3">\n<i class="fas
fa-list"></i> On this page \\ n</div> \\ n< nav id="bd-toc-nav"> \\ n
```

```
nav section-nav flex-column">\n\n<a
class="reference internal nav-link"
href="#cheatsheets">\nCheatsheets\n</a>\n\nclass="toc-h2 nav-item toc-
entry">\n<a class="reference internal nav-link"</pre>
href="#handouts">\nHandouts\n</a>\n\nclass="toc-h2 nav-item toc-
entry">\n<a class="reference internal nav-link"</pre>
href="\#contribute">\nContribute\n</a>\n\n</nav>\n</div>\n</div
class="toc-item">\n</div>\n<main class="col-12 col-md-11 col-xl-8 py-12 col-md-12 col-md-12 col-xl-8 py-12 col-xl-9 col-xl-9 py-12 col-xl-9 co
md-5 pl-md-5 pr-md-4 bd-content" role="main">\n<div>\n<section id="matplotlib-
cheatsheets-and-handouts">\n<h1>Matplotlib cheatsheets and handouts<a
class="headerlink" href="#matplotlib-cheatsheets-and-handouts" title="Permalink
to this headline">\P</a></h1>\n<section id="cheatsheets">\n<h2>Cheatsheets<a
class="headerlink" href="#cheatsheets" title="Permalink to this
headline">¶</a></h2>\n<div class="twocol docutils container">\n<div
class="docutils container">\n<a class="reference internal image-reference"
href="_images/cheatsheets-1.png"><img alt="image of first page of cheatsheets"
class="align-center" src="_images/cheatsheets-1.png" style="width: 270px;"
/></a>\n</div>\n<div class="docutils container">\n<a class="reference internal
image-reference" href="_images/cheatsheets-2.png"><img alt="image of second page</pre>
of cheatsheets" class="align-center" src="_images/cheatsheets-2.png"
style="width: 270px;" /></a>\n</div>\n<a class="reference external"
href="./cheatsheets.pdf">Cheatsheets [pdf]</a>\n</section>\n<section
id="handouts">\n<h2>Handouts<a class="headerlink" href="#handouts"
title="Permalink to this headline">\P</a></h2>\n<div class="twocol docutils"
container">\n<div class="docutils container">\n<a class="reference internal
image-reference" href="_images/handout-beginner.png"><image alt="image of beginner</pre>
handout" class="align-center" src="_images/handout-beginner.png" style="width:
270px;" /></a>\n<a class="reference external" href="./handout-
beginner.pdf">Beginner [pdf]</a>\n</div>\n<div class="docutils
container">\n<a class="reference internal image-reference"</pre>
href="_images/handout-intermediate.png"><img alt="image of intermediate handout"
class="align-center" src="_images/handout-intermediate.png" style="width:
270px;" /></a>\n<a class="reference external" href="./handout-
intermediate.pdf">Intermediate [pdf]</a> \\ n</div> \\ class="docutils to be a constant of the constant of
container">\n<a class="reference internal image-reference"</pre>
href="_images/handout-tips.png"><img alt="image of tips handout" class="align-
center" src=" images/handout-tips.png" style="width: 270px;" /></a>\n<a
class="reference external" href="./handout-tips.pdf">Tips
[pdf]</a>\n</div>\n</section>\n<section
id="contribute">\n<h2>Contribute<a class="headerlink" href="#contribute"
title="Permalink to this headline">¶</a></h2>\nIssues, suggestions, or pull-
requests gratefully accepted at\n<a class="reference external" href="https://git
hub.com/matplotlib/cheatsheets">matplotlib/cheatsheets</a>\n</se
ction>\n</div>\n\n<div class="prev-next-
area">\n</div>\n</div>\n</div>\n<script src="_static/scripts/pydata-
sphinx-theme.js?digest=1999514e3f237ded88cf"></script>\n<footer class="footer
mt-5 mt-md-0">\n<div class="container">\n<div class="footer-item">\n<p
```

class="copyright">\n© Copyright 2012 - 2023 The Matplotlib development
team.
\n\n</div>\n<div class="footer-item">\n\nCreated using Sphinx
4.4.0.
\n\n</div>\n</div>\n</footer>\n<script defer src="https://static.c
loudflareinsights.com/beacon.min.js/v84a3a4012de94ce1a686ba8c167c359c16969738933
17" integrity="sha512-euoFGowhlaLqXsPWQ48qSkBSCFs3DPRyiwVu3FjR96cMPx+Fr+gpWRhIaf
cHwqwCqWS42RZhIudOvEI+Ckf6MA==" data-cf-beacon=\'{"rayId":"8497fccb8c5f7932","b"
:1,"version":"2024.1.0","token":"0175964edbd040b6ac0bff692bcb22ec"}\'
crossorigin="anonymous"></script>\n</body>\n</html>'

```
[4]: def get_attr(s1,attr):
    r = 0
    for i in s1:
        if attr in s1:
            x = s1.find(attr)
            r += 1
            s1 = s1[x+3:]
    return r
```

0.1 pyton package – Communications

```
[5]: from urllib.request import urlopen
    url = "https://github.com/pyrogram/pyrogram/"
    page = urlopen(url)
    html_bytes = page.read()
    s1 = html_bytes.decode("utf-8")
    a1 = get_attr(s1,"src")
    a2 = get_attr(s1,"img")
    a3 = get_attr(s1,"href")
    a = ["communication",a1,a2,a3]
```

```
[6]: a
```

[6]: ['communication', 108, 25, 174]

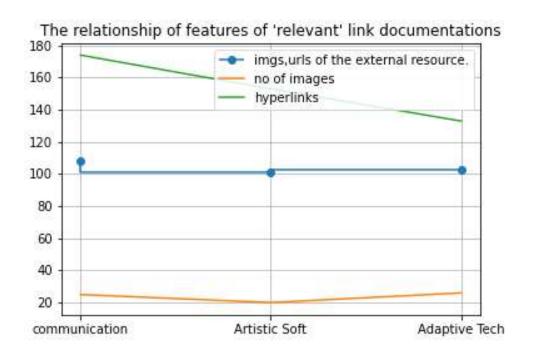
0.2 python package – Artistic Software Category

```
[7]: from urllib.request import urlopen
    url = "https://github.com/lace/vg"
    page = urlopen(url)
    html_bytes = page.read()
    s1 = html_bytes.decode("utf-8")
    a1 = get_attr(s1,"src")
    a2 = get_attr(s1,"img")
    a3 = get_attr(s1,"href")
    b = ["Artistic Soft",a1,a2,a3]
```

```
[8]: b
 [8]: ['Artistic Soft', 101, 20, 153]
     0.3 python package – Adaptive Technologies
 [9]: from urllib.request import urlopen
      url = "https://github.com/NapoII/logNow"
      page = urlopen(url)
     html_bytes = page.read()
      s1 = html bytes.decode("utf-8")
      a1 = get_attr(s1, "src")
      a2 = get_attr(s1,"img")
      a3 = get_attr(s1,"href")
      c = ["Adaptive Tech",a1,a2,a3]
[10]: c
[10]: ['Adaptive Tech', 103, 26, 133]
[11]: x = [a,b,c]
      df = pd.DataFrame(x,columns=["Category","src","images","href"])
     0.4 plotting
[12]: df
[12]:
             Category src images href
      0 communication 108
                                      174
                                 25
      1 Artistic Soft 101
                                 20
                                      153
      2 Adaptive Tech 103
                                      133
                                 26
[49]: fig, ax = plt.subplots()
      # plotting all 3 variables
      ax.plot(df["Category"],df["src"],marker='o',drawstyle = 'steps',solid_capstyle_
      →= "butt", label="imgs,urls of the external resource.")
      ax.plot(df["Category"],df["images"],label="no of images")
      ax.plot(df["Category"],df["href"],label="hyperlinks")
      # Title it
      ax.set_title("The relationship of features of 'relevant' link documentations")
      # Legend for identification
      ax.legend()
      ax.grid('on')
```

[]:

Results of running 1st cell



Results of running 2nd cell

