DA-webscraper

April 26, 2019

Data Scraping

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In [1]: #import basic libraries
        import pandas as pd
        import re
        import logging
        import scrapy
       from scrapy.crawler import CrawlerProcess
In [2]: from scrapy.pipelines.images import ImagesPipeline
        from scrapy.exceptions import DropItem
        class ImageItem(scrapy.Item):
            #direct link to image file for downloading via ImagePipeline
            image_urls = scrapy.Field()
            #link to specific image page for scraping more stats
            image_links = scrapy.Field()
            #image attributes
           titles = scrapy.Field() #image title
           date_posted = scrapy.Field() #date posted
           hashtags = scrapy.Field() #hashtags
            #image stats
           views = scrapy.Field() #number of views of the current image
            faves = scrapy.Field() #number of faves of the current image
            comments = scrapy.Field() #number of comments of the current image
            downloads = scrapy.Field() #number of downloads of the current image
            #artist details
            artists = scrapy.Field() #artist's name
           artist_urls = scrapy.Field() #link to the artist's account
            artist_deviations = scrapy.Field() #number of deviations (images) posted
           artist_comments = scrapy.Field() #number of total comments received
           artist_page_views = scrapy.Field() #number of total page views received
           artist_scraps = scrapy.Field() #number of scraps (WIPs or archived art)
           artist_watchers = scrapy.Field() #number of watchers (followers)
            artist_critiques = scrapy.Field() #number of critiques given
           artist_forum_posts = scrapy.Field() #number of forum posts made
            artist_faves = scrapy.Field() #number of total faves received
            artist_asl = scrapy.Field() #age, sex, location
           artist_dob = scrapy.Field() #date of birth
            account_age = scrapy.Field() #how old the account is
            # to be filled in by ImagePipeline
           image_paths = scrapy.Field() #location of image in local storage
        class MyImagesPipeline(ImagesPipeline):
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Image pipeline for downloading images.
            def get_media_requests(self, item, info):
                for image_url in item['image_urls']:
                    yield scrapy.Request(image_url)
            def item_completed(self, results, item, info):
                image_paths = [x['path'] for ok, x in results if ok]
                if not image_paths:
                    raise DropItem("Item contains no images")
                item['image_paths'] = image_paths
                return item
In [3]: class ImageSpider(scrapy.Spider):
            name = 'images'
            start_urls = ['https://www.deviantart.com/popular-all-time/?q=sherlock&offset=0']
            #initialize offset at 0
            offset = 0
            #set offset limit to control the amount of images downloaded
            offset_limit = 16000
            custom_settings = {
                'LOG_LEVEL': logging.INFO,
                'ITEM_PIPELINES': {'__main__.MyImagesPipeline': 1}, #enable image download
                'IMAGES_STORE': 'DA-images-2', #store images in DA-images-2 folder
                'FEED_FORMAT': 'json',
                'FEED_URI': 'image-data-2.json', #store image data in image-data-2.json
                'DOWNLOAD_FAIL_ON_DATALOSS': False, #if image download fails (due to various
        issues), don't send error message, just flag it.
                'DOWNLOAD_DELAY': 0.25 #250 ms download delay, with inbuilt scrapy randomization
            }
            def parse(self, response):
                #get page body
                page = response.css('div.page-results span.thumb')
                for img in page:
                    #thumbnail link
                    thumbnail = img.css('::attr(data-super-img)').get()
                    #full link that leads to the individual image post
                    img_link = img.css('::attr(href)').get()
                    #if there is a thumbnail, aka the post is an image, follow url to scrape
        image details
                        yield scrapy.Request(img_link, callback = self.parse_image)
                #go to next page
                while self.offset < self.offset_limit:</pre>
                    self.offset += 24 #DA's natural offset scroll is set at increments of 24
                    next_page = f'https://www.deviantart.com/popular-all-
        time/?q=sherlock&offset={self.offset}'
                    yield scrapy.Request(next_page, callback=self.parse)
            def parse_image(self, response):
                #initialize image item
                image = ImageItem()
                #get image url (for downloading via ImagePipeline)
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image["image_urls"] = [response.css('div.dev-view-deviation img
::attr(src)').get()]
        #get other image info
        image["image_links"] = response.url
        image['titles'] = response.xpath("//a[@class='title']/text()").extract()[0]
        image['date_posted'] = response.xpath("//div[@class='dev-right-bar-content dev-
metainfo-content dev-metainfo-details']/dl/dd/span/text()").extract()[0]
        #check whether image has hashtags (some don't)
        hashtag = response.xpath("//div[@class='dev-about-tags-cc dev-about-
breadcrumb']/a/text()").extract()
        if hashtag: image['hashtags'] = hashtag
        #get image stats
        stats = response.xpath("//div[@class='dev-right-bar-content dev-metainfo-
content dev-metainfo-stats']/dl/dd/text()").extract()
        #check that stats list only contains numbers (sometimes irregular data falls in)
        stats = [re.sub("\D", "", s) for s in stats]
        #remove any None types from list
        stats = list(filter(None, stats))
        #the responses are ordered in: views, faves, comments, downloads
        #sometimes comments are disabled, sometimes downloads are disabled
        headers = ['views','faves','comments','downloads']
        #if comments/downloads are disabled, they will not be looped over for a given
image
        for i in range(len(stats)):
            image[headers[i]] = stats[i]
        #qet artist info
        artist_name = response.xpath("//small[@class='author']/span/a/text()").extract()
        if artist_name:
            image['artists'] =
response.xpath("//small[@class='author']/span/a/text()").extract()[-1]
            image['artist_urls'] =
response.xpath("//small[@class='author']/span/a/@href").extract()[-1]
            request = scrapy.Request(image['artist_urls'], callback=self.parse_artist,
meta={'image':image})
            yield request
        else: #if no artist name (sometimes artists are banned), just yield the image
            image['artists'] = 'Banned'
            yield image
    def parse_artist(self, response):
        #qet image item for the higher-level parser
        image = response.meta['image']
        #get artist account stats
        artist_stats = response.xpath("//div[@id='super-secret-
stats']/div/div/strong/text()").extract()
        headers = ['artist_deviations', 'artist_comments', 'artist_page_views', 'artist_scr
aps', 'artist_watchers', 'artist_critiques', 'artist_forum_posts', 'artist_faves']
        for i in range(len(artist_stats)):
            image[headers[i]] = artist_stats[i]
        #qet account age and membership details
        age_membership = response.xpath("//a[@href='#super-secret-
activity']/div/text()").extract()
        #sometimes the age is wrapped up in a span
        if len(age_membership) == 0:
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age = response.xpath("//a[@href='#super-secret-
       activity']/span/div/text()").extract()[0]
                  age_membership.append(age)
              image['account_age'] = age_membership[0]
               #get artist personal details
              artist_details = response.xpath("//div[@id='super-secret-
       why']/div/div/dl/dd/text()").extract()
              details = ['artist_asl','artist_dob'] #some artists do not share their dobs
              for i in range(len(artist_details)):
                  image[details[i]] = artist_details[i]
              return image
       process = CrawlerProcess()
       process.crawl(ImageSpider)
       process.start()
2019-04-21 01:03:58 [scrapy.utils.log] INFO: Scrapy 1.5.2 started (bot: scrapybot)
2019-04-21 01:03:58 [scrapy.utils.log] INFO: Versions: lxml 4.2.1.0, libxml2 2.9.8,
cssselect 1.0.3, parsel 1.5.1, w31ib 1.20.0, Twisted 17.5.0, Python 3.6.8 | Anaconda,
Inc.| (default, Dec 29 2018, 19:04:46) - [GCC 4.2.1 Compatible Clang 4.0.1
(tags/RELEASE_401/final)], pyOpenSSL 18.0.0 (OpenSSL 1.1.1b 26 Feb 2019),
cryptography 2.6.1, Platform Darwin-18.2.0-x86_64-i386-64bit
2019-04-21 01:03:58 [scrapy.crawler] INFO: Overridden settings: {'DOWNLOAD_DELAY':
0.25, 'DOWNLOAD_FAIL_ON_DATALOSS': False, 'FEED_FORMAT': 'json', 'FEED_URI': 'image-
data-2.json', 'LOG_LEVEL': 20}
2019-04-21 01:03:58 [scrapy.extensions.telnet] INFO: Telnet Password: 0de246c7e41b8d30
2019-04-21 01:03:58 [scrapy.middleware] INFO: Enabled extensions:
['scrapy.extensions.corestats.CoreStats',
 'scrapy.extensions.telnet.TelnetConsole'
 'scrapy.extensions.memusage.MemoryUsage',
 'scrapy.extensions.feedexport.FeedExporter',
 'scrapy.extensions.logstats.LogStats']
2019-04-21 01:03:58 [scrapy.middleware] INFO: Enabled downloader middlewares:
['scrapy.downloadermiddlewares.httpauth.HttpAuthMiddleware',
 'scrapy.downloadermiddlewares.downloadtimeout.DownloadTimeoutMiddleware',
 'scrapy.downloadermiddlewares.defaultheaders.DefaultHeadersMiddleware',
 'scrapy.downloadermiddlewares.useragent.UserAgentMiddleware',
 'scrapy.downloadermiddlewares.retry.RetryMiddleware',
 'scrapy.downloadermiddlewares.redirect.MetaRefreshMiddleware',
 'scrapy.downloadermiddlewares.httpcompression.HttpCompressionMiddleware',
 'scrapy.downloadermiddlewares.redirect.RedirectMiddleware',
 'scrapy.downloadermiddlewares.cookies.CookiesMiddleware',
 'scrapy.downloadermiddlewares.httpproxy.HttpProxyMiddleware',
 'scrapy.downloadermiddlewares.stats.DownloaderStats']
2019-04-21 01:03:58 [scrapy.middleware] INFO: Enabled spider middlewares:
['scrapy.spidermiddlewares.httperror.HttpErrorMiddleware',
 'scrapy.spidermiddlewares.offsite.OffsiteMiddleware',
 'scrapy.spidermiddlewares.referer.RefererMiddleware',
 'scrapy.spidermiddlewares.urllength.UrlLengthMiddleware',
 'scrapy.spidermiddlewares.depth.DepthMiddleware']
2019-04-21 01:03:58 [scrapy.middleware] INFO: Enabled item pipelines:
['__main__.MyImagesPipeline']
2019-04-21 01:03:58 [scrapy.core.engine] INFO: Spider opened
2019-04-21 01:03:58 [scrapy.extensions.logstats] INFO: Crawled 0 pages (at 0
pages/min), scraped 0 items (at 0 items/min)
2019-04-21 01:04:58 [scrapy.extensions.logstats] INFO: Crawled 269 pages (at 269
pages/min), scraped 77 items (at 77 items/min)
2019-04-21 01:05:58 [scrapy.extensions.logstats] INFO: Crawled 552 pages (at 283
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pages/min), scraped 167 items (at 90 items/min)
2019-04-21 01:06:58 [scrapy.extensions.logstats] INFO: Crawled 832 pages (at 280
pages/min), scraped 253 items (at 86 items/min)
2019-04-21 01:07:43 [scrapy.pipelines.files] WARNING: File (code: 404): Error
downloading file from <GET https://img00.deviantart.net/1ef1/i/2015/115/1/2/dumbasses_
by_princessblackrabbit-d4q8gnn.jpg> referred in <None>
2019-04-21 01:07:43 [scrapy.core.scraper] WARNING: Dropped: Item contains no images
{'account_age': 'Deviant for 11 Years',
 'artist_asl': '31/Female/Germany',
 'artist_comments': '58,004',
 'artist_critiques': '0 ',
 'artist_deviations': '1,978 ',
 'artist_dob': 'December 12, 1987',
 'artist_faves': '5,555 ',
 'artist_forum_posts': '2 '
 'artist_page_views': '227,344 ',
 'artist_scraps': '7',
 'artist_urls': 'https://www.deviantart.com/princessblackrabbit',
 'artist_watchers': '1,349 ',
 'artists': 'PrincessBlackRabbit',
 'comments': '38',
 'date_posted': 'February 19, 2012',
 'faves': '77',
 'image_links':
'https://www.deviantart.com/princessblackrabbit/art/dumbasses-285929555',
 'image_urls': ['https://img00.deviantart.net/1ef1/i/2015/115/1/2/dumbasses_by_princes
sblackrabbit-d4q8gnn.jpg'],
 'titles': 'dumbasses',
 'views': '1438'}
2019-04-21 01:07:58 [scrapy.extensions.logstats] INFO: Crawled 1125 pages (at 293
pages/min), scraped 348 items (at 95 items/min)
2019-04-21 01:08:58 [scrapy.extensions.logstats] INFO: Crawled 1399 pages (at 274
pages/min), scraped 427 items (at 79 items/min)
2019-04-21 01:09:58 [scrapy.extensions.logstats] INFO: Crawled 1675 pages (at 276
pages/min), scraped 507 items (at 80 items/min)
2019-04-21 01:10:58 [scrapy.extensions.logstats] INFO: Crawled 1946 pages (at 271
pages/min), scraped 583 items (at 76 items/min)
2019-04-21 01:11:58 [scrapy.extensions.logstats] INFO: Crawled 2218 pages (at 272
pages/min), scraped 662 items (at 79 items/min)
2019-04-21 01:12:58 [scrapy.extensions.logstats] INFO: Crawled 2486 pages (at 268
pages/min), scraped 737 items (at 75 items/min)
2019-04-21 01:13:58 [scrapy.extensions.logstats] INFO: Crawled 2757 pages (at 271
pages/min), scraped 810 items (at 73 items/min)
2019-04-21 01:14:58 [scrapy.extensions.logstats] INFO: Crawled 3024 pages (at 267
pages/min), scraped 880 items (at 70 items/min)
2019-04-21 01:15:58 [scrapy.extensions.logstats] INFO: Crawled 3287 pages (at 263
pages/min), scraped 946 items (at 66 items/min)
2019-04-21 01:16:58 [scrapy.extensions.logstats] INFO: Crawled 3553 pages (at 266
pages/min), scraped 1018 items (at 72 items/min)
2019-04-21 01:17:58 [scrapy.extensions.logstats] INFO: Crawled 3810 pages (at 257
pages/min), scraped 1084 items (at 66 items/min)
2019-04-21 01:18:58 [scrapy.extensions.logstats] INFO: Crawled 4064 pages (at 254
pages/min), scraped 1146 items (at 62 items/min)
2019-04-21 01:19:58 [scrapy.extensions.logstats] INFO: Crawled 4317 pages (at 253
pages/min), scraped 1203 items (at 57 items/min)
2019-04-21 01:20:58 [scrapy.extensions.logstats] INFO: Crawled 4577 pages (at 260
pages/min), scraped 1265 items (at 62 items/min)
2019-04-21 01:21:58 [scrapy.extensions.logstats] INFO: Crawled 4830 pages (at 253
pages/min), scraped 1319 items (at 54 items/min)
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2019-04-21 01:22:58 [scrapy.extensions.logstats] INFO: Crawled 5096 pages (at 266
pages/min), scraped 1390 items (at 71 items/min)
2019-04-21 01:23:58 [scrapy.extensions.logstats] INFO: Crawled 5349 pages (at 253
pages/min), scraped 1446 items (at 56 items/min)
2019-04-21 01:24:58 [scrapy.extensions.logstats] INFO: Crawled 5604 pages (at 255
pages/min), scraped 1503 items (at 57 items/min)
2019-04-21 01:25:58 [scrapy.extensions.logstats] INFO: Crawled 5861 pages (at 257
pages/min), scraped 1564 items (at 61 items/min)
2019-04-21 01:26:58 [scrapy.extensions.logstats] INFO: Crawled 6118 pages (at 257
pages/min), scraped 1623 items (at 59 items/min)
2019-04-21 01:27:58 [scrapy.extensions.logstats] INFO: Crawled 6370 pages (at 252
pages/min), scraped 1680 items (at 57 items/min)
2019-04-21 01:28:58 [scrapy.extensions.logstats] INFO: Crawled 6624 pages (at 254
pages/min), scraped 1738 items (at 58 items/min)
2019-04-21 01:29:58 [scrapy.extensions.logstats] INFO: Crawled 6868 pages (at 244
pages/min), scraped 1789 items (at 51 items/min)
2019-04-21 01:30:58 [scrapy.extensions.logstats] INFO: Crawled 7115 pages (at 247
pages/min), scraped 1842 items (at 53 items/min)
2019-04-21 01:31:58 [scrapy.extensions.logstats] INFO: Crawled 7361 pages (at 246
pages/min), scraped 1894 items (at 52 items/min)
2019-04-21 01:32:58 [scrapy.extensions.logstats] INFO: Crawled 7611 pages (at 250
pages/min), scraped 1949 items (at 55 items/min)
2019-04-21 01:33:58 [scrapy.extensions.logstats] INFO: Crawled 7870 pages (at 259
pages/min), scraped 2010 items (at 61 items/min)
2019-04-21 01:34:58 [scrapy.extensions.logstats] INFO: Crawled 8124 pages (at 254
pages/min), scraped 2068 items (at 58 items/min)
2019-04-21 01:35:58 [scrapy.extensions.logstats] INFO: Crawled 8370 pages (at 246
pages/min), scraped 2121 items (at 53 items/min)
2019-04-21 01:36:58 [scrapy.extensions.logstats] INFO: Crawled 8615 pages (at 245
pages/min), scraped 2175 items (at 54 items/min)
2019-04-21 01:37:58 [scrapy.extensions.logstats] INFO: Crawled 8865 pages (at 250
pages/min), scraped 2230 items (at 55 items/min)
2019-04-21 01:38:58 [scrapy.extensions.logstats] INFO: Crawled 9111 pages (at 246
pages/min), scraped 2285 items (at 55 items/min)
2019-04-21 01:39:58 [scrapy.extensions.logstats] INFO: Crawled 9370 pages (at 259
pages/min), scraped 2347 items (at 62 items/min)
2019-04-21 01:40:58 [scrapy.extensions.logstats] INFO: Crawled 9622 pages (at 252
pages/min), scraped 2406 items (at 59 items/min)
2019-04-21 01:41:58 [scrapy.extensions.logstats] INFO: Crawled 9867 pages (at 245
pages/min), scraped 2453 items (at 47 items/min)
2019-04-21 01:42:58 [scrapy.extensions.logstats] INFO: Crawled 10117 pages (at 250
pages/min), scraped 2514 items (at 61 items/min)
2019-04-21 01:43:58 [scrapy.extensions.logstats] INFO: Crawled 10362 pages (at 245
pages/min), scraped 2567 items (at 53 items/min)
2019-04-21 01:44:58 [scrapy.extensions.logstats] INFO: Crawled 10626 pages (at 264
pages/min), scraped 2635 items (at 68 items/min)
2019-04-21 01:45:58 [scrapy.extensions.logstats] INFO: Crawled 10883 pages (at 257
pages/min), scraped 2696 items (at 61 items/min)
2019-04-21 01:46:58 [scrapy.extensions.logstats] INFO: Crawled 11130 pages (at 247
pages/min), scraped 2750 items (at 54 items/min)
2019-04-21 01:47:58 [scrapy.extensions.logstats] INFO: Crawled 11382 pages (at 252
pages/min), scraped 2808 items (at 58 items/min)
2019-04-21 01:48:58 [scrapy.extensions.logstats] INFO: Crawled 11634 pages (at 252
pages/min), scraped 2866 items (at 58 items/min)
2019-04-21 01:49:58 [scrapy.extensions.logstats] INFO: Crawled 11895 pages (at 261
pages/min), scraped 2934 items (at 68 items/min)
2019-04-21 01:50:58 [scrapy.extensions.logstats] INFO: Crawled 12145 pages (at 250
pages/min), scraped 2988 items (at 54 items/min)
2019-04-21 01:51:58 [scrapy.extensions.logstats] INFO: Crawled 12401 pages (at 256
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pages/min), scraped 3049 items (at 61 items/min)
2019-04-21 01:52:58 [scrapy.extensions.logstats] INFO: Crawled 12668 pages (at 267
pages/min), scraped 3121 items (at 72 items/min)
2019-04-21 01:53:58 [scrapy.extensions.logstats] INFO: Crawled 12916 pages (at 248
pages/min), scraped 3174 items (at 53 items/min)
2019-04-21 01:54:58 [scrapy.extensions.logstats] INFO: Crawled 13173 pages (at 257
pages/min), scraped 3237 items (at 63 items/min)
2019-04-21 01:55:58 [scrapy.extensions.logstats] INFO: Crawled 13420 pages (at 247
pages/min), scraped 3292 items (at 55 items/min)
2019-04-21 01:56:58 [scrapy.extensions.logstats] INFO: Crawled 13682 pages (at 262
pages/min), scraped 3356 items (at 64 items/min)
2019-04-21 01:57:58 [scrapy.extensions.logstats] INFO: Crawled 13942 pages (at 260
pages/min), scraped 3423 items (at 67 items/min)
2019-04-21 01:58:58 [scrapy.extensions.logstats] INFO: Crawled 14191 pages (at 249
pages/min), scraped 3480 items (at 57 items/min)
2019-04-21 01:59:58 [scrapy.extensions.logstats] INFO: Crawled 14453 pages (at 262
pages/min), scraped 3547 items (at 67 items/min)
2019-04-21 02:00:58 [scrapy.extensions.logstats] INFO: Crawled 14707 pages (at 254
pages/min), scraped 3605 items (at 58 items/min)
2019-04-21 02:01:58 [scrapy.extensions.logstats] INFO: Crawled 14963 pages (at 256
pages/min), scraped 3663 items (at 58 items/min)
2019-04-21 02:02:58 [scrapy.extensions.logstats] INFO: Crawled 15211 pages (at 248
pages/min), scraped 3720 items (at 57 items/min)
2019-04-21 02:03:58 [scrapy.extensions.logstats] INFO: Crawled 15461 pages (at 250
pages/min), scraped 3771 items (at 51 items/min)
2019-04-21 02:04:58 [scrapy.extensions.logstats] INFO: Crawled 15710 pages (at 249
pages/min), scraped 3828 items (at 57 items/min)
2019-04-21 02:05:58 [scrapy.extensions.logstats] INFO: Crawled 15966 pages (at 256
pages/min), scraped 3889 items (at 61 items/min)
2019-04-21 02:06:58 [scrapy.extensions.logstats] INFO: Crawled 16218 pages (at 252
pages/min), scraped 3948 items (at 59 items/min)
2019-04-21 02:07:58 [scrapy.extensions.logstats] INFO: Crawled 16472 pages (at 254
pages/min), scraped 4007 items (at 59 items/min)
2019-04-21 02:08:58 [scrapy.extensions.logstats] INFO: Crawled 16721 pages (at 249
pages/min), scraped 4061 items (at 54 items/min)
2019-04-21 02:09:58 [scrapy.extensions.logstats] INFO: Crawled 16968 pages (at 247
pages/min), scraped 4113 items (at 52 items/min)
2019-04-21 02:10:58 [scrapy.extensions.logstats] INFO: Crawled 17217 pages (at 249
pages/min), scraped 4167 items (at 54 items/min)
2019-04-21 02:11:58 [scrapy.extensions.logstats] INFO: Crawled 17473 pages (at 256
pages/min), scraped 4228 items (at 61 items/min)
2019-04-21 02:12:58 [scrapy.extensions.logstats] INFO: Crawled 17721 pages (at 248
pages/min), scraped 4280 items (at 52 items/min)
2019-04-21 02:13:58 [scrapy.extensions.logstats] INFO: Crawled 17964 pages (at 243
pages/min), scraped 4331 items (at 51 items/min)
2019-04-21 02:14:58 [scrapy.extensions.logstats] INFO: Crawled 18203 pages (at 239
pages/min), scraped 4375 items (at 44 items/min)
2019-04-21 02:15:58 [scrapy.extensions.logstats] INFO: Crawled 18445 pages (at 242
pages/min), scraped 4422 items (at 47 items/min)
2019-04-21 02:16:58 [scrapy.extensions.logstats] INFO: Crawled 18696 pages (at 251
pages/min), scraped 4473 items (at 51 items/min)
2019-04-21 02:17:07 [scrapy.core.scraper] ERROR: Spider error processing <GET
https://www.deviantart.com/sherlock-holmes> (referer:
https://www.deviantart.com/sherlock-holmes/art/Sherlock-Holmes-Club-ID-8867259)
Traceback (most recent call last):
 File "/anaconda3/lib/python3.6/site-packages/twisted/internet/defer.py", line 653,
in _runCallbacks
    current.result = callback(current.result, *args, **kw)
  File "<ipython-input-3-b0621a444cf4>", line 110, in parse_artist
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age = response.xpath("//a[@href='#super-secret-
activity']/span/div/text()").extract()[0]
IndexError: list index out of range
2019-04-21 02:17:58 [scrapy.extensions.logstats] INFO: Crawled 18948 pages (at 252
pages/min), scraped 4524 items (at 51 items/min)
2019-04-21 02:18:58 [scrapy.extensions.logstats] INFO: Crawled 19202 pages (at 254
pages/min), scraped 4578 items (at 54 items/min)
2019-04-21 02:19:58 [scrapy.extensions.logstats] INFO: Crawled 19436 pages (at 234
pages/min), scraped 4621 items (at 43 items/min)
2019-04-21 02:20:58 [scrapy.extensions.logstats] INFO: Crawled 19693 pages (at 257
pages/min), scraped 4679 items (at 58 items/min)
2019-04-21 02:21:58 [scrapy.extensions.logstats] INFO: Crawled 19938 pages (at 245
pages/min), scraped 4728 items (at 49 items/min)
2019-04-21 02:22:58 [scrapy.extensions.logstats] INFO: Crawled 20180 pages (at 242
pages/min), scraped 4773 items (at 45 items/min)
2019-04-21 02:23:58 [scrapy.extensions.logstats] INFO: Crawled 20423 pages (at 243
pages/min), scraped 4816 items (at 43 items/min)
2019-04-21 02:24:58 [scrapy.extensions.logstats] INFO: Crawled 20658 pages (at 235
pages/min), scraped 4858 items (at 42 items/min)
2019-04-21 02:25:58 [scrapy.extensions.logstats] INFO: Crawled 20893 pages (at 235
pages/min), scraped 4899 items (at 41 items/min)
2019-04-21 02:26:58 [scrapy.extensions.logstats] INFO: Crawled 21136 pages (at 243
pages/min), scraped 4942 items (at 43 items/min)
2019-04-21 02:27:58 [scrapy.extensions.logstats] INFO: Crawled 21382 pages (at 246
pages/min), scraped 4993 items (at 51 items/min)
2019-04-21 02:28:58 [scrapy.extensions.logstats] INFO: Crawled 21618 pages (at 236
pages/min), scraped 5033 items (at 40 items/min)
2019-04-21 02:29:58 [scrapy.extensions.logstats] INFO: Crawled 21867 pages (at 249
pages/min), scraped 5082 items (at 49 items/min)
2019-04-21 02:30:58 [scrapy.extensions.logstats] INFO: Crawled 22106 pages (at 239
pages/min), scraped 5126 items (at 44 items/min)
2019-04-21 02:31:58 [scrapy.extensions.logstats] INFO: Crawled 22342 pages (at 236
pages/min), scraped 5166 items (at 40 items/min)
2019-04-21 02:32:58 [scrapy.extensions.logstats] INFO: Crawled 22577 pages (at 235
pages/min), scraped 5210 items (at 44 items/min)
2019-04-21 02:33:58 [scrapy.extensions.logstats] INFO: Crawled 22807 pages (at 230
pages/min), scraped 5252 items (at 42 items/min)
2019-04-21 02:34:58 [scrapy.extensions.logstats] INFO: Crawled 23037 pages (at 230
pages/min), scraped 5289 items (at 37 items/min)
2019-04-21 02:35:58 [scrapy.extensions.logstats] INFO: Crawled 23268 pages (at 231
pages/min), scraped 5330 items (at 41 items/min)
2019-04-21 02:36:58 [scrapy.extensions.logstats] INFO: Crawled 23508 pages (at 240
pages/min), scraped 5372 items (at 42 items/min)
2019-04-21 02:37:58 [scrapy.extensions.logstats] INFO: Crawled 23736 pages (at 228
pages/min), scraped 5408 items (at 36 items/min)
2019-04-21 02:38:58 [scrapy.extensions.logstats] INFO: Crawled 23959 pages (at 223
pages/min), scraped 5440 items (at 32 items/min)
2019-04-21 02:39:51 [scrapy.pipelines.files] ERROR: File (unknown-error): Error
processing file from <GET https://images-wixmp-</pre>
{\tt ed30a86b8c4ca887773594c2.wixmp.com/f/0dc70551-b190-44e8-9b59-5e9378a30049/d2y7tid-cc06}
bf13-115d-41d9-b9ec-00c33c8cab98.jpg?token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdW
IiOiJ1cm46YXBwOjdlMGQxODg50DIyNjQzNzNhNWYwZDQxNWVhMGQyNmUwIiwiaXNzIjoidXJuOmFwcDo3ZTBk
MTg40TgyMjY0MzczYTVmMGQ0MTV1YTBkMjZ1MCIsIm9iai16W1t7InBhdGgi0iJcL2ZcLzBkYzcwNTUxLWIx0T
{\tt Y2Fi0TguanBnIn1dXSwiYXVkIjpbInVybjpzZXJ2aWN10mZpbGUuZG93bmxvYWQiXX0.3RRjMd6\_q6cBQZh-lock} \\ {\tt Y2Fi0TguanBnIn1dXSwiYMDinModel} \\ {\tt Y2Fi0Tg
YJCavU7n72FfQbHmg1KuoeJpdk8> referred in <None>
Traceback (most recent call last):
  File "/anaconda3/lib/python3.6/site-packages/twisted/internet/defer.py", line 1386,
```

in _inlineCallbacks

```
result = g.send(result)
 File "/anaconda3/lib/python3.6/site-packages/scrapy/core/downloader/middleware.py",
line 43, in process_request
    defer.returnValue((yield download_func(request=request,spider=spider)))
 File "/anaconda3/lib/python3.6/site-packages/twisted/internet/defer.py", line 1363,
in returnValue
    raise _DefGen_Return(val)
twisted.internet.defer._DefGen_Return: <200 https://images-wixmp-
ed30a86b8c4ca887773594c2.wixmp.com/f/0dc70551-b190-44e8-9b59-5e9378a30049/d2y7tid-cc06
bf13-115d-41d9-b9ec-00c33c8cab98.jpg?token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdW
IiOiJ1cm46YXBwOjdlMGQxODg50DIyNjQzNzNhNWYwZDQxNWVhMGQyNmUwIiwiaXNzIjoidXJuOmFwcDo3ZTBk
MTg40TgyMjY0MzczYTVmMGQ0MTV1YTBkMjZ1MCIsIm9iaiI6W1t7InBhdGgi0iJcL2ZcLzBkYzcwNTUxLWIx0T
AtNDR10C05YjU5LTV10TM30GEzMDA00VwvZDJ5N3RpZC1jYzA2YmYxMy0xMTVkLTQxZDktYj11Yy0wMGMzM2M4
Y2FiOTguanBnIn1dXSwiYXVkIjpbInVybjpzZXJ2aWN10mZpbGUuZG93bmxvYWQiXX0.3RRjMd6_q6cBQZh-
YJCavU7n72FfQbHmg1KuoeJpdk8>
During handling of the above exception, another exception occurred:
Traceback (most recent call last):
 File "/anaconda3/lib/python3.6/site-packages/scrapy/pipelines/files.py", line 401,
in media_downloaded
    checksum = self.file_downloaded(response, request, info)
 File "/anaconda3/lib/python3.6/site-packages/scrapy/pipelines/images.py", line 101,
    return self.image_downloaded(response, request, info)
  File "/anaconda3/lib/python3.6/site-packages/scrapy/pipelines/images.py", line 105,
in image_downloaded
    for path, image, buf in self.get_images(response, request, info):
 File "/anaconda3/lib/python3.6/site-packages/scrapy/pipelines/images.py", line 125,
    image, buf = self.convert_image(orig_image)
 File "/anaconda3/lib/python3.6/site-packages/scrapy/pipelines/images.py", line 151,
in convert_image
    image.save(buf, 'JPEG')
 File "/anaconda3/lib/python3.6/site-packages/PIL/Image.py", line 1899, in save
    self.load()
 File "/anaconda3/lib/python3.6/site-packages/PIL/ImageFile.py", line 228, in load
    "(%d bytes not processed)" % len(b))
OSError: image file is truncated (50 bytes not processed)
2019-04-21 02:39:51 [scrapy.core.scraper] WARNING: Dropped: Item contains no images
{'account_age': 'Deviant for 15 Years',
'artist_asl': 'Philippines',
 'artist_comments': '731 ',
 'artist_critiques': '0',
 'artist_deviations': '75 ',
 'artist_faves': '100 ',
 'artist_forum_posts': '1 ',
 'artist_page_views': '38,875 ',
 'artist_scraps': '0 ',
 'artist_urls': 'https://www.deviantart.com/melrosestormhaven',
 'artist_watchers': '454 ',
 'artists': 'melrosestormhaven',
 'comments': '678',
 'date_posted': 'September 7, 2010',
 'downloads': '818',
 'faves': '4856',
 'image_links': 'https://www.deviantart.com/melrosestormhaven/art/BBC-Sherlock-and-
John-178404133',
 'image_urls': ['https://images-wixmp-
```

```
bf13-115d-41d9-b9ec-00c33c8cab98.jpg?token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdW
IiOiJ1cm46YXBwOjdlMGQxODg50DIyNjQzNzNhNWYwZDQxNWVhMGQyNmUwIiwiaXNzIjoidXJuOmFwcDo3ZTBk
MTg40TgyMjY0MzczYTVmMGQ0MTV1YTBkMjZ1MCIsIm9iai16W1t7InBhdGgi0iJcL2ZcLzBkYzcwNTUxLWIx0T
AtNDR10C05YjU5LTV10TM30GEzMDA00VwvZDJ5N3RpZC1jYzA2YmYxMy0xMTVkLTQxZDktYj11Yy0wMGMzM2M4
Y2FiOTguanBnIn1dXSwiYXVkIjpbInVybjpzZXJ2aWN10mZpbGUuZG93bmxvYWQiXX0.3RRjMd6_q6cBQZh-
YJCavU7n72FfQbHmg1KuoeJpdk8'],
 'titles': 'BBC Sherlock and John',
 'views': '58451'}
2019-04-21 02:39:58 [scrapy.extensions.logstats] INFO: Crawled 24201 pages (at 242
pages/min), scraped 5483 items (at 43 items/min)
2019-04-21 02:40:58 [scrapy.extensions.logstats] INFO: Crawled 24440 pages (at 239
pages/min), scraped 5529 items (at 46 items/min)
2019-04-21 02:41:58 [scrapy.extensions.logstats] INFO: Crawled 24668 pages (at 228
pages/min), scraped 5562 items (at 33 items/min)
2019-04-21 02:42:58 [scrapy.extensions.logstats] INFO: Crawled 24903 pages (at 235
pages/min), scraped 5602 items (at 40 items/min)
2019-04-21 02:43:58 [scrapy.extensions.logstats] INFO: Crawled 25127 pages (at 224
pages/min), scraped 5634 items (at 32 items/min)
2019-04-21 02:44:01 [scrapy.core.engine] INFO: Closing spider (finished)
2019-04-21 02:44:01 [scrapy.extensions.feedexport] INFO: Stored json feed (5638 items)
in: image-data-2.json
2019-04-21 02:44:01 [scrapy.statscollectors] INFO: Dumping Scrapy stats:
{'downloader/request_bytes': 17258826,
 'downloader/request_count': 25136,
 'downloader/request_method_count/GET': 25136,
 'downloader/response_bytes': 2029325194,
 'downloader/response_count': 25136,
 'downloader/response_status_count/200': 25134,
 'downloader/response_status_count/404': 1,
 'downloader/response_status_count/502': 1,
 'dupefilter/filtered': 7563,
 'file_count': 5639,
 'file_status_count/downloaded': 5639,
 'finish_reason': 'finished',
 'finish_time': datetime.datetime(2019, 4, 21, 5, 44, 1, 103890),
 'item_dropped_count': 2,
 'item_dropped_reasons_count/DropItem': 2,
 'item_scraped_count': 5638,
 'log_count/ERROR': 2,
 'log_count/INFO': 109,
 'log_count/WARNING': 3,
 'memusage/max': 234598400,
 'memusage/startup': 104931328,
 'request_depth_max': 3,
 'response_received_count': 25135,
 'retry/count': 1,
 'retry/reason_count/502 Bad Gateway': 1,
 'scheduler/dequeued': 19495,
 'scheduler/dequeued/memory': 19495,
 'scheduler/enqueued': 19495,
 'scheduler/enqueued/memory': 19495,
 'spider_exceptions/IndexError': 1,
 'start_time': datetime.datetime(2019, 4, 21, 4, 3, 58, 630997)}
2019-04-21 02:44:01 [scrapy.core.engine] INFO: Spider closed (finished)
In [4]: df = pd.read_json('image-data-2.json')
```

ed30a86b8c4ca887773594c2.wixmp.com/f/0dc70551-b190-44e8-9b59-5e9378a30049/d2y7tid-cc06

Out[4]:	account_age		artist_asl	artist_comments	\	
	0	Deviant for 5	Years	Female/France	468	
	1	Deviant for 8	Years	Female/Russia	169	
	2	Deviant for 6	Years	Female/Japan	23	
	3	Deviant for 13	Years	Female/France	322	
	4	Deviant for 7	Years	Female/South Korea	436	
	5	Deviant for 10	Years	United Kingdom	17	
	6	Deviant for 7	Years	28/Female/Russia	8,264	
	7	Deviant for 12	Years	France	376	
	8	Deviant for 6	Years	Female/United Kingdom	128	
	9	Deviant for 7	Years	Female/United States	32	
	10	Deviant for 9	Years	Female/Belgium	780	
	11	Deviant for 15	Years	Female/Australia	5,301	
	12	Deviant for 9	Years	29/Female/South Africa	52	
	13	Deviant for 15	Years	Female/Canada	4,021	
	14	Deviant for 12	Years	Latvia	3,400	
	15	Deviant for 6	Years	Australia	15,748	
	16	Deviant for 7	Years	Female/United Kingdom	164	
	17	Deviant for 8	Years	Female/Unknown	950	
	18	Deviant for 9	Years	Female/Poland	1,551	
	19	Deviant for 8	Years	Female/Germany	143	
	20	Deviant for 7	Years	24/Female/United States	5,300	
	21	Deviant for 8	Years	Spain	28,352	
	22	Deviant for 14	Years	Female/United States	3,784	
	23	Deviant for 11	Years	Venezuela	6,558	
	24	Deviant for 11	Years	Female/Canada	134	
	25	Deviant for 9	Years	30/Female/Russia	173	
	26	Deviant for 8	Years	Taiwan	541	
	27	Deviant for 13	Years	Female/United Kingdom	784	
	28	Deviant for 7	Years	Female/Moldova	376	
	29	Deviant for 11	Years	28/Female/Ukraine	685	
				• • •	• • •	
	5608	Deviant for 7	Years	Female/Spain	329	
	5609	Deviant for 6	Years	Female/Canada	1,983	
	5610	Deviant for 12	Years	United States	4,634	
	5611	Deviant for 6	Years	21/Male/India	8,613	
	5612	Deviant for 8	Years	Male/United States	1,477	
	5613	Deviant for 11	Years	Female/Russia	775	
	5614	Deviant for 7	Years	Female/United States	12,004	
	5615	Deviant for 6	Years	Male/India	676	
	5616	Deviant for 11	Years	Male/Malaysia	117	
	5617	Deviant for 11	Years	32/Male/Russia	1,251	
	5618	Deviant for 6	Years	Male/Philippines	149	
	5619	Deviant for 12	Years	France	473	
	5620	Deviant for 9	Years	36/Male/Spain	2,667	
	5621	Deviant for 5	Years	United Kingdom	107	
	5622	Deviant for 9	Years	Female/United States	2,253	
	5623	Deviant for 8	Years	Female/United States	1,688	

5624	Deviant for 10	Years	Fe	emale/France	2,126
5625	Deviant for 11 Years		Male/United Kingdom		7,471
5626	Deviant for 5	Years	20/Female/United Kingdom		519
5627	Deviant for 14	Years	Fen	nale/Germany	3,608
5628	Deviant for 10	Years	33/Female/Uni	ted Kingdom	196
5629	Deviant for 11	Years	Fen	nale/Finland	12,610
5630	Deviant for 8	Years	Female/Uni	ted Kingdom	2,180
5631	Deviant for 9	Years	25/Fe	emale/Canada	5,881
5632	Deviant for 9	Years	F	Gemale/Japan	10,445
5633	Deviant for 12	Years	Female/Un	nited States	1,586
5634	Deviant for 9	Years	Fe	emale/Russia	623
5635	Deviant for 13	Years	F	Female/Spain	5,973
5636	Deviant for 14	Years	Male/Uni	ted Kingdom	89,573
5637	Deviant for 6	Years	Fe	emale/Russia	3,925
	artist_critique	s artis	st_deviations	artist_dob	<pre>artist_faves \</pre>
0	0.	0	183	March 5	1,830
1	0.	0	36	March 5	216
2	0.	0	28	September 9	53
3	0.	0	55	March 29	396
4	0.	0	73	September 17	37
5	0.	0	77	NaN	6
6	0.	0	150	April 21, 1990	3,760
7	0.	0	13	NaN	114
8	0.	0	97	NaN	0
9	0.	0	8	March 27	30
10	0.	0	43	NaN	45
11	2.	0	1,010	December 6	505
12	0.	0	50	January 25, 1990	356
13	0.	0	184	NaN	3,066
14	0.	0	415	NaN	237
15	0.	0	210	September 15	1,256
16	0.	0	18	NaN	92
17	0.	0	200	February 14	357
18	0.	0	136	NaN	456
19	0.	0	68	December 22	215
20	0.	0	206	February 8, 1995	1,607
21	0.	0	398	January 27	3,821
22	0.	0	239	February 11	788
23	0.	0	758	February 7	8,778
24	0.	0	27	October 15	4,098
25	0.	0	73	February 26, 1989	183
26	0.		173	September 17	1,182
27	0.	0	237	September 19	652
28	0.	0	140	June 21	417
29	0.	0	30	September 2, 1990	1,599
5608	0.	0	41	April 3	372

5609	0.0	404	January 2	8 1,971
5610	0.0	293	June 2	
5611	2.0	156	May 16, 199	7 2,367
5612	0.0	122	September 1	
5613	0.0	40	October	
5614	1.0	197	September 1	0 8,137
5615	0.0	128	September 1	8 114
5616	0.0	65	October 2	3 47
5617	0.0	173	May 23, 198	6 914
5618	0.0	135	February 1	2 121
5619	0.0	61	Na	N 217
5620	3.0	215	April 15, 198	3 214
5621	0.0	28	Na	N 2
5622	0.0	65	August 2	1 564
5623	4.0	123	Na	N 1,847
5624	0.0	135	December 1	6 229
5625	0.0	639	December	8 6,183
5626	0.0	82	September 12, 199	8 471
5627	0.0	170	Na	N 272
5628	0.0	259	June 3, 198	5 28
5629	0.0	570	July 1	8 2,718
5630	0.0	173	January 2	9 1,424
5631	0.0	116	May 17, 199	3 3,196
5632	2.0	292	May 2	4 3,435
5633	0.0	417	Na	N 145
5634	0.0	134	Na	N 561
5635	0.0	287	February	8 1,316
5636	0.0	80	December	6 70,833
5637	0.0	218	July	1 59
	$\verb"artist_forum_posts"$	artist_page_views	$artist_scraps$.	comments \
0	0	10,634	0 .	22.0
1	0	11,377	2 .	45.0
2	0	9,907	0 .	102.0
3	0	36,431	3 .	35.0
4	0	45,119	0 .	8.0
5	0	18,474	0 .	21.0
6	0	68,208	0 .	46.0
7	0	6,566	0 .	5.0
8	0	29,442	0 .	22.0
9	0	2,958	2 .	38.0
10	0	29,133	0 .	23.0
11	45	4,256,227	184 .	66.0
12	0	4,660	0 .	34.0
13	4	86,094	24 .	73.0
14	0	84,301	0 .	81.0
15	0	236,955	0 .	18.0
16	0	7,223	9 .	129.0

17	0	30,365	0		252.0
18	0	37,202	0	• • •	61.0
19	1	5,863	50	•••	26.0
20	0	357,800	2	•••	93.0
21	1	307,901	11	•••	131.0
22	2	151,427	8	•••	45.0
23	7	179,005	479	• • •	8.0
24	0	5,447	0	• • •	25.0
25	0	86,717	0	• • •	20.0
26	0	31,372	0	• • •	16.0
27	10	42,535	0	• • •	31.0
28	0	23,300	0	• • •	15.0
29	0	75,854	0	• • •	30.0
	O	70,004	O	• • •	30.0
5608	0	6,738	0	• • •	24.0
5609	0	278,550	9	• • •	30.0
5610	0	31,471	3	• • •	18.0
5611	0	24,715	1	• • •	64.0
5612	0		9	• • •	77.0
5613	0	13,515		• • •	
5614		32,967	0 17	• • •	103.0
5615	364	42,202	17	• • •	39.0
	0	9,881	0	• • •	16.0
5616 5617	0	14,384	0	• • •	15.0
5617	0	98,343	9	• • •	20.0
5618	0	18,515	0	• • •	10.0
5619	0	393,967	0	• • •	107.0
5620	1	67,880	0	• • •	32.0
5621	0	9,081	0	• • •	4.0
5622	0	9,858	0	• • •	245.0
5623	24	48,473	6	• • •	10.0
5624	0	24,844	14	• • •	6.0
5625	1	716,043	4	• • •	22.0
5626	0	8,012	0	• • •	14.0
5627	0	52,423	9	• • •	27.0
5628	0	17,532	0	• • •	14.0
5629	0	391,745	2	• • •	38.0
5630	0	32,462	10	• • •	22.0
5631	0	155,664	5	• • •	83.0
5632	58	181,201	5	• • •	116.0
5633	182	27,771	80	• • •	9.0
5634	0	20,083	0		21.0
5635	0	214,965	126		66.0
5636	37	440,468	0		72.0
5637	0	514,945	0	• • •	149.0

date_posted downloads faves \
0 January 17, 2014 92.0 142.0
1 December 30, 2011 186.0 1135.0

2	August 11,	2012	225.0	1959.0
3	January 21,	2012	48.0	551.0
4	August 19,		34.0	91.0
5	August 1,	2010	59.0	696.0
6	February 20,	2012	46.0	218.0
7	January 27,	2012	14.0	96.0
8	July 13,	2013	8.0	66.0
9	December 26,	2011	39.0	877.0
10	April 14,	2016	16.0	157.0
11	April 9,	2012	146.0	1262.0
12	September 13,	2011	41.0	246.0
13	August 21,	2012	129.0	383.0
14	July 29,	2010	91.0	202.0
15	July 11,	2012	22.0	100.0
16	June 26,	2011	189.0	948.0
17	August 7,	2010	393.0	2515.0
18	September 16,	2013	NaN	375.0
19	May 16,	2013	34.0	258.0
20	January 6,	2013	NaN	1462.0
21	April 23,	2012	211.0	801.0
22	February 27,	2012	184.0	1101.0
23	November 20,	2012	NaN	242.0
24	January 15,	2012	20.0	350.0
25	January 17,	2017	NaN	449.0
26	August 23,	2010	42.0	280.0
27	January 24,		281.0	1167.0
28	September 19,		105.0	377.0
29	November 10,		89.0	508.0
	•			
5608	September 24,	2012	26.0	72.0
5609	December 9,	2015	NaN	183.0
5610	May 1,	2013	8.0	156.0
5611	March 8,		8.0	152.0
5612	January 14,		96.0	527.0
5613	June 14,		93.0	
5614	September 1,		14.0	103.0
5615	May 7,		3.0	85.0
5616	November 10,		335.0	275.0
5617	July 14,		138.0	290.0
5618	January 1,		9.0	81.0
5619	December 9,		542.0	1051.0
5620	March 8,		92.0	161.0
5621	March 3,		16.0	73.0
5622	November 15,		203.0	1328.0
5623	June 8,		NaN	125.0
5624	January 9,		14.0	39.0
5625	January 16,		NaN	86.0
5626	March 13,		NaN	102.0
3020	rial CII 13,	2014	IValV	102.0

```
January 29, 2012
5627
                                   24.0
                                            63.0
5628
           April 30, 2010
                                    {\tt NaN}
                                           152.0
5629
          August 20, 2012
                                 125.0
                                           451.0
5630
         February 8, 2012
                                   83.0
                                           221.0
5631
        September 7, 2011
                                 958.0
                                          2249.0
             June 17, 2014
5632
                                    {\tt NaN}
                                           956.0
5633
          August 17, 2011
                                    NaN
                                            80.0
         October 10, 2010
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