Mirror SmugMug Statistics

July 12, 2022

0.1 Mirror SmugMug Statistics

This notebook runs queries against the sqlite database mirror.db that holds consolidated Smug-Mug online image metadata.

Images are here: https://conceptcontrol.smugmug.com/.

```
[1]: NB. J version - notebook runtime smoutput 9!:14'' smoutput timestamp 6!:0 ''
```

```
j903/j64avx2/windows/release-a/commercial/www.jsoftware.com/2021-12-16T15:15:09/
clang-13-0-0/SLEEF=1
12 Jul 2022 12:54:02
```

0.1.1 Load mirrorstats script

The mirrorstats.ijs script must be made available to the J load utility. The JOD mls verb does this automatically.

Alternatively you can edit the J start up script ~config/startup.ijs and add lines like:

```
buildpublic_j_ 0 : 0
mirrorstats ~temp/mirrorstats.ijs
)
```

```
[2]: load 'mirrorstats'
```

```
NB. (mirrorstats) interface word(s): 20220712j122126

NB. -----

NB. NotDivisible NB. albums with image counts that are not divisible by 3 and 5

NB. albdist NB. all mean album distances km from position (x)

NB. fsd NB. fetch sqlite dictionary array

NB. fst NB. fetch sqlite reads table

NB. meanalbdist NB. mean km distance of geotagged album images from (x)
```

0.1.2 Set mirror.db database file location

Note: a test mirror.db is available on GitHub.

c:/SmugMirror/Documents/XrefDb/mirror.db

0.1.3 Set various utils

```
[4]: NB. set portable box characters for LaTeX
0 0$portchars ''

NB. cell clip format
ccf=: [ {."1 [: ": ]}
```

0.1.4 Set homebase coordinates

The home coordinates are set in this fashion to avoid embedding location data in code.

homebase.txt is simple text file with a single line like:

```
109.375956 -33.852775
```

Longitude and Latitude are in decimal degrees and use the sign conventions of Jean Meeus's book *Astronomical Algorithms*.

```
[5]: NB. longitude and latitude of home decimal degrees

NB. western longitudes +, northern latitudes +

(3:0)''

if. fexist ALTMIRRORDBPATH, 'homebase.txt' do.

MeeusHomeLonLat_mirrorstats_=: _999&".read ALTMIRRORDBPATH, 'homebase.txt'

else.

MeeusHomeLonLat_mirrorstats_=: 0 0

end.
)

smoutput (;:'Longitude Latitude') ,: <"0 MeeusHomeLonLat_mirrorstats_
```

```
+----+
|Longitude|Latitude|
+-----+
|0 |0 |
```

0.1.5 Load SQLITE data

```
[6]: NB. image columns
({."1 r})=: {:"1 r=: 'select * from OnlineImage order by UpLoadDate desc' fsd dbf

NB. album columns
({."1 r})=: {:"1 r=: 'select * from Album order by OnlineImageCount desc' fsd dbf
```

0.1.6 Total online image count

0.1.7 Recent album adjustments

```
[8]: NB. most recently "updated" albums
r=: 'select ImagesLastUpdated, AlbumName from Album order by LastUpdated desc
→limit 5' fsd dbf

NB. display with album "centroid" distance
NB. 0 distance means no geotagged images
(>&.> {:"1 r) , < ,. meanalbdist&> ;1{1{ r}}
```

```
+-----+
|2022-07-11T18:55:42+00:00|Grandparents |11509.7|
|2022-07-11T18:50:59+00:00|From Hazel's Albums|11551.9|
|2022-07-10T23:35:00+00:00|Idaho Instants |12032.6|
|2022-07-09T06:47:18+00:00|Caught My Eye |10643.5|
|2022-07-07T06:13:09+00:00|Image Hacking |10952.1|
```

0.1.8 Recent image additions

```
[9]: NB. last 15 images loaded
;"1 ] 15 {. (10 {.&.> RealDate) ,. (<' - ') ,. OnlineImageFile}

1931-05-20 - hazel age 19 may 20 1931.jpg
1959-10-01 - aileen john baker casper wyoming 1959.jpg
2022-07-08 - ketchum festival shade beer.jpg
2022-07-08 - annual ketchum art festival.jpg
2022-07-08 - mali ketchum art craft festival.jpg
2022-07-08 - ketchum ore wagon museum.jpg
2022-07-08 - summer sun patio umbrellas.jpg
```

```
2022-07-07 - dreaming precariat.jpg
2022-06-23 - old canyon guy.jpg
2022-06-22 - polygamy porter.jpg
2022-06-24 - supai tunnel kaibab trail.jpg
2022-06-23 - velvia north rim cliff sunset.jpg
2022-06-25 - me roosevelt point.jpg
2022-06-27 - eratz monument valley watercolor.jpg
2022-06-27 - darktable color grade test.jpg
```

0.1.9 Album statistics

```
[10]: NB. 10 largest albumns
10 {. (>AlbumName) ,. ": ,. >OnlineImageCount
```

Idaho Instants	480
The Way We Were	429
Cell Phoning It In	347
Weekenders	336
Missouri Moments	315
California Captures	270
My Kids	196
Image Hacking	169
Montana Now and Then	166
Panoramas	161

[11]: NB. album image counts dstat OnlineImageCount

79 sample size: minimum: 0 maximum: 480 1st quartile: 17 2nd quartile: 48 3rd quartile: 109 first mode: 21 first antimode: 480 mean: 79.6456 std devn: 96.6141 skewness: 2.2513 kurtosis: 8.2726

0.1.10 Images per year

My image dates are a mixture of EXIF dates and manually assigned dates. The manually assigned dates are rarely accurate and reflect my best guess as to when a picture was taken. Many images do not have dates. They show up in year 0.

```
[12]: NB. images per year - year 0 means no date
70 list ',' ,.~ ": rf=: \:~ |: yic=: > freq 0 {"1 rdt=: itYMDhms RealDate
```

```
98, 2019 446, 2018 294, 2017 227, 2016 298,
2022 241, 2021 163, 2020
2015 207, 2014
                 98, 2013 172, 2012 178, 2011 217, 2010 152, 2009 144,
2008 180, 2007 284, 2006 166, 2005 120, 2004 110, 2003
                                                            79, 2002 118,
2001 135, 2000
                 33, 1999
                             6, 1996
                                        1, 1995
                                                 19, 1994
                                                             8, 1993
      18, 1991
                                                  6, 1987
1992
                 12, 1990
                             4, 1989
                                       14, 1988
                                                            10, 1986
                                                                        6,
                                                            17, 1979
1985
       4, 1984
                  2, 1983
                           42, 1982
                                       4, 1981
                                                 37, 1980
                                                                       90,
1978
      27, 1977
                            20, 1975
                                       8, 1974
                                                 22, 1973
                                                             4, 1972
                 10, 1976
                                                                        5,
1971
      23, 1970
                 33, 1969
                            22, 1968
                                      45, 1967
                                                 32, 1966
                                                            24, 1965
                                                                        5,
      13, 1963
                  8, 1962
                            20, 1961
                                       6, 1960
                                                  7, 1959
                                                            16, 1958
1964
                                                                       13,
                  6, 1955
1957
       7, 1956
                            11, 1954
                                      10, 1953
                                                  4, 1952
                                                             7, 1951
                                                                        3,
       9, 1949
                 17, 1948
                            10, 1947
                                        3, 1946
                                                  5, 1945
                                                             2, 1944
1950
                                                                        2,
                                        6, 1939
1943
       1, 1942
                  1, 1941
                             7, 1940
                                                  2, 1938
                                                             3, 1937
                  4, 1934
                                        1, 1932
1936
       5, 1935
                             3, 1933
                                                  1, 1931
                                                             5, 1930
                                                                        1,
1929
       1, 1928
                  1, 1927
                             2, 1925
                                        2, 1924
                                                  1, 1920
                                                             2, 1919
                                                                        2,
1917
       2, 1916
                  2, 1914
                             1, 1912
                                        1, 1910
                                                  4, 1908
                                                             3, 1907
                                                                        1,
1906
       2, 1905
                  3, 1902
                             2, 1901
                                        1, 1900
                                                  1, 1897
                                                             1, 1894
                                                                        1,
1888
       2, 1880
                  2, 1870
                             1, 1864
                                        1,
                                              0 181,
```

Images per year statistics since the year 2000. It was around 2000 that I started saving digital image files.

```
[13]: NB. images per year statistics for years after 1999 dstat (1 {"1 rf) #~ 1999 < 0 {"1 rf
```

```
sample size:
                       23
minimum:
                       33
maximum:
                      446
1st quartile:
                      118
2nd quartile:
                      166
3rd quartile:
                      227
first mode:
                       98
first antimode:
                      241
mean:
                   180.87
                   90.142
std devn:
skewness:
                   1.0616
kurtosis:
                   4.4393
```

0.1.11 Uploads per year

I often upload old images that get counted in prior years. These counts reflect actual database inserts. Note the count of 724 in 2019. I did not insert that many images in 2019. The upload count probably reflects reorganizing existing images. The count of 1531 in 2009 marks the year I transferred my online images to SmugMug.

```
[14]: 70 list ',' ,.~ ": uf=: \:~ |: upc=: > freq 0 {"1 udt=: itYMDhms UploadDate
```

```
2022 253, 2021 203, 2020 109, 2019 724, 2018 352, 2017 319, 2016 362, 2015 222, 2014 102, 2013 256, 2012 233, 2011 314, 2010 212, 2009 1531,
```

```
[15]: NB. uploads per year statistics - less outliers > 600 dstat (1 {"1 uf) #~ 600 > 1 {"1 uf
```

sample size: 12 minimum: 102 maximum: 362 1st quartile: 207.5 2nd quartile: 243 3rd quartile: 316.5 first mode: 253 first antimode: 253 mean: 244.75 std devn: 84.2239 skewness: _0.3088 kurtosis: 2.235

0.1.12 Flarp rate

The *flarp rate* gives a rough indication of how much image rework and reloading I do. It shows up as a discrepancy between year counts and upload counts.

```
[16]: smoutput flc=: (0{upc) ,: (1{upc) - 1{(\:~)&.|: yic #"1~ (0{yic) e. 0{upc}
```

2022 2021 2020 2019 2018 2017 2016 2015 2014 2013 2012 2011 2010 2009 12 40 11 278 58 92 64 15 4 84 55 97 60 1387

Flarp statistics excluding the first upload year.

[17]: dstat }: 1{flc

sample size: 13 minimum: 4 maximum: 278 1st quartile: 13.5 2nd quartile: 58 3rd quartile: 88 first mode: 12 first antimode: 12 mean: 66.9231 std devn: 70.8172 skewness: 2.1248 kurtosis: 7.2818

0.1.13 NotDivisible counts

NotDivisible counts how many images must be added to a gallery so that the total number of gallery images is evenly divisible by 3 and 5. The iPhone SmugMug app displays images in rows of 3 (portrait) or 5 (landscape) and I like completely filled rows. When the total is evenly divisible by 15 = 3 * 5 both portrait and landscape rows are filled.

[18]: 10 {. NotDivisible dbf

+	-+-+
	3 5 15 [Album Name]
161	1 4 4 Panoramas
142	2 3 8 Caught My Eye
7	2 3 8 Does Not Fit
7	
7	2 3 8 Partial Restorations -+-+-+
122	2 3 8 To Much Information
7	2 3 8 Fake Pixels
164	2 1 11 Banff and Jasper 2006
49	2 1 11 New York 2005

0.1.14 Dominant color keywords

Keywords starting with O_ are dominant color keys assigned by the Python SmugPyter program.

```
[19]: NB. keyword columns
({."1 r}=: {:"1 r=: 'select * from ImageKeywordXr' fsd dbf
```

```
[20]: topbotk=: 4 : 0

NB.topbotk v-- (x) top and bottom (y) keys

kf=: ofreq y

kf=: (' ' ,. >;0{kf) ,.~ ":>,.;1{kf}

(x {. kf) ,. |. (-x) {. kf}
)
```

Note: the abundance of neutral, (grey and near grey), colors. Well exposed color balanced images tend, on average, to be neutral. This is why photographers use grey cards and color balancing software picks neutrals.

```
[21]: NB. top/bottom 20 color keywords
ColorKeys=: Keyword #~ ('0_'&-:)@(2&{.)&> Keyword
20 topbotk ColorKeys
```

```
529 O_darkslategrey
                             1 0_forestgreen
375 0_black
                             1 0_aquamarine
266 0_darkolivegreen
                             1 0_purple
236 O_steelblue
                             1 0_magenta
234 O_dimgrey
                            1 0_lightyellow
209 0_darkgrey
                            1 0_lawngreen
192 O_rosybrown
                            1 0 lavenderblush
178 O_gainsboro
                            1 0_indigo
178 O_lightsteelblue
                            1 0 lightgreen
173 O_lightgrey
                            1 0_springgreen
                            1 0 cyan
172 0 cornflowerblue
168 0_grey
                             1 0_hotpink
                            1 0 darkmagenta
168 0 tan
                             1 O_mediumspringgreen
121 O_silver
                            1 O_floralwhite
120 O_lavender
93 O_lightslategrey
                            1 0_cornsilk
91 0_peru
                             1 0_mediumorchid
                            2 0_greenyellow
90 O_sienna
82 0_skyblue
                            0_{\text{lime}}
80 O_saddlebrown
                            2 0_limegreen
```

0.1.15 Print size keywords

Print size assumes a resolution of 360 DPI (Dot (pixels) per Inch). This is slightly higher than the frequent default of 300 DPI and was chosen because twice the resolution, 720 DPI, is a common setting for fine art prints. Online prints from SmugMug and elsewhere that use the print sizes computed here will render well.

```
[22]: NB. top/bottom 20 print size keywords
SizeKeys=: ColorKeys -.~ Keyword #~ ({.&> Keyword) e.&> <'0123456789'

NB. remove odd keys that do not follow name conventions

NssKeys=: <;._1 ' 0z0 0z1'
SizeKeys=: SizeKeys -. (<;._1 ' 50th'), NssKeys

20 topbotk SizeKeys
```

```
943 4x6
             1 2.25x4
910 5x7
             1 10x16
550 8x12
             1 8x40
305 10x15
             1 12x30
274 5x6.7
             1 6x24
270 6x8
             1 16x24
198 3x4
             1 3x3
152 2.5x3.5 1 5x8
136 4x5
           1 5.5x14
```

```
93 5x5
             1 9x21
67 6x10
             1 4x5.3
             1 2x2.5
61 3x5
55 8x10
             2 10x40
52 2x3
             2 16x20
28 4x4
             2 12x24
27 10x14
             2 6x15
             2 10x13
25 3.5x5
25 8x8
             2 11x28
15 6x6
             2 11x16
15 5x6
             2 9x16
```

[23]: NB. size keys that indicate not enough pixels or nonstandard aspect ratio NssKeys ,. <"0 +/"1 NssKeys =/ Keyword

+---+---+ |0z0|258| +---+---+ |0z1|475| +---+---+

0.1.16 Descriptive keywords

All keywords that are not color or size keys.

[24]: DescKeys=: Keyword -. ColorKeys, SizeKeys, NssKeys
20 topbotk DescKeys

1317 geotagged 1 rafting 1037 usa 1 prayer 546 mali 1 tooth 395 me 1 saber 247 idaho 1 columns 228 park 1 remnants 205 helen 1 pictographs 202 iphone 1 skeleton 187 lake 1 sizes 173 river 1 rafts 173 canada 1 dell 168 missouri 1 large 150 jacob 1 josie 143 museum 1 powers 128 ontario 1 fremont 127 montana 1 knife 1 hazhard 116 canyon 114 sculpture 1 lectern 100 evelyn 1 bride 91 trail 1 bedazzled

0.1.17 Panorama statistics

I have enjoyed making panoramas for years. I consider any image with an **aspect ratio** >: 2 a panorama. Many of my panoramas have nonstandard ratios, i.e. they are not simple 2x1, 3x1, 4x1, 5x1 ... ratios and consequently do not get assigned a size key.

```
[25]: NB. rounded image aspect ratios - aspect ratio is always >: 1
ratios=: 0.005 round %/"1 \:"1~ OriginalHeight ,. OriginalWidth

NB. aspect ratio counts
PanAspects=: >: i. >: >. /ratios
smoutput RatioCounts=: ;"1 (2 <\ PanAspects) ,. <"0 }. }: PanAspects histogram2
→ratios
```

```
1 2 4962
```

- 2 3 145
- 3 4 62
- 4 5 19
- 5 6 4
- 6 7 0

0.1.18 Total number of panoramas with Aspect Ratio >: 2

Note: this simple criteria of picking images based on aspect ratio misses some panoramas. Some pictures, built from more than one image, have standard aspect ratios.

```
[26]: +/pancnts=: }. 2 {"1 RatioCounts
```

230

0.1.19 Online panorama ratios

```
[27]: NB. percentage of panoramic images by aspect ratio - last % is overall smoutput panper=: (}. 0 2 {"1 RatioCounts) ,. 0.01 round 100 * pancnts % #ratios smoutput '-' ,: '%' ,~ ": }. +/panper
```

```
2 145 2.79
```

- 3 62 1.19
- 4 19 0.37
- 5 4 0.08
- 6 0 0

230 4.43%

0.1.20 Most extreme panoramas Aspect Ratio >: 5

```
[28]: NB. most extreme panoramas, i.e. aspect ratios >: 5
80 ccf (OnlineImageFile ,. RealDate ,. Keywords) #~ 5 <: ratios
```

0.1.21 Recently uploaded panoramas

```
[29]: NB. most recent panoramas
80 ccf ,. 5 {. (OnlineImageFile ,. RealDate ,. Keywords) #~ 2 <: ratios
```

0.1.22 GPS distances

```
[30]: NB. distances in km from near to far excluding (0,0) lb

NB. convert to Meeus lb convention for (earthdist)

plb=: (i. #Longitude) ,. (-Longitude) ,. Latitude

plb=: |: plb #~ -.0 0 -:"1 ] 1 2 {"1 plb

plb=: /:~ (0{plb) ,.~ MeeusHomeLonLat earthdist 1 2{plb
```

```
[31]: NB. format image distance fmdist=: {{;"1 ":&.> (<"0 ] 0.01 round 0 {"1 y) ,. (<' - ') ,. (1 {"1⊔ →y){0nlineImageFile}}
```

```
[32]: NB. 10 nearest geotagged images km fmdist 10{.plb
```

```
1042.84 - ghana secondary school teacher bungalows 1976.jpg
1042.93 - corn harvest students tamale ghana.jpg
1043.05 - ghana secondary school [12075167].jpg
3446.24 - me livingstone airport [47004492].jpg
3453.59 - mali sprayview hotel [51064919].jpg
3454.27 - curio market from balloon [49529252].jpg
```

```
3454.37 - vic falls train station [51228396].jpg
     3454.71 - me livingstone statue [19983766].jpg
     3454.82 - victoria falls hotel distance marker [36406766].jpg
     3463.73 - eclipse tour group [2486870].jpg
[33]: NB. 10 furthest geotagged images km
     fmdist |. _10{.plb
     18358.9 - ruth kwajalein airport sign 1981.jpg
     17705.9 - lab south view 12x4 [5037801].jpg
     17705.9 - mid pacific marine lab from air [254442016].jpg
     17705.9 - me next atoll looking south [5088708].jpg
     17704.7 - enewetak from air [5561415].jpg
     17694.4 - me runit dome [6671846].jpg
     17687.9 - deep diving [7444953].jpg
     16654.9 - me photographing battleship missouri.jpg
     16654.8 - nimitz statue missouri battleship.jpg
     16654.8 - battleship missouri plaque.jpg
[34]: NB. image distance statistics
      dstat 0 {"1 plb
     sample size:
                         1317
     minimum:
                      1042.84
     maximum:
                      18358.9
     1st quartile:
                     10058.5
     2nd quartile: 11759.2
     3rd quartile:
                     12094.7
     first mode:
                      11909.8
     first antimode: 1042.84
     mean:
                      11235.6
     std devn:
                      2033.14
     skewness:
                      0.7066
                       7.5674
     kurtosis:
[35]: NB. 1s mark panoramas
      pbits=: (}.PanAspects) <: "0 1 %/"1 \: "1~ OriginalHeight ,. OriginalWidth
      NB. panorama image distances
      gtp=: plb #~ (1 {"1 plb) e. I. 0{pbits
[36]: NB. 10 nearest panoramas
      fmdist 10 {. gtp
     3549.61 - ndeke hotel sign [37985773].jpg
     7656.21 - me spittal pond bermuda [278786543].jpg
     8879.8 - 132 topham terrace orleans white winter.jpg
     8881.84 - petrie island river [98449654].jpg
```

```
8928.88 - battersea beach dog lake panorama.jpg
     8933.55 - kingston from fort henry [2355485].jpg
     8934.79 - confederation harbor [12870536].jpg
     9429.28 - bed and breakfast view.jpg
     9682.96 - artsgarden.jpg
[37]: NB. 10 furthest panoramas
      fmdist |. _10 {. gtp
     17705.9 - lab south view 12x4 [5037801].jpg
     16653.2 - waikiki beach diamond head panorama.jpg
     16651.5 - honolulu from diamond head panorama.jpg
     16651.3 - diamond head caldera interior.jpg
     16564.4 - mauna kea sunset summit panorama.jpg
     12657.6 - oregon coast.jpg
     12565 - mali sedi crystal cove park [2208469192].jpg
     12558.4 - crater lake east rim panorama.jpg
     12526.7 - mono lake panorama north overlook.jpg
     12518.8 - baja california coast.jpg
[38]: NB. mean panorama distance
      dstat 0 {"1 gtp
     sample size:
                          109
     minimum:
                      3549.61
     maximum:
                      17705.9
     1st quartile:
                     11615.9
     2nd quartile:
                      11942.2
     3rd quartile:
                   12100.9
     first mode:
                      12101.2
     first antimode: 3549.61
     mean:
                       11711
                      1685.87
     std devn:
                      0.1925
     skewness:
     kurtosis:
                       10.201
[39]: NB. mean album geotagged image distances
      mad=: albdist 0
[40]: NB. album "centroid" distance statistics
      dstat ;0 {"1 mad
     sample size:
                           61
     minimum:
                      1042.94
     maximum:
                      17794.8
     1st quartile:
                      9396.75
     2nd quartile:
                      10952.1
```

8897.37 - alexandra bridge ottawa [407055261].jpg

```
3rd quartile:
                      11892.9
     first mode:
                      11803.9
     first antimode: 11803.9
     mean:
                      10391.1
     std devn:
                      2670.06
     skewness:
                      _0.8302
     kurtosis:
                       5.6797
[41]: NB. format album distances.
      fmtad=:\{\{('8.2'\&(8!:2) ,. km) ,. '-', "1 alb [ 'km alb'=. |: x \{. y\}\}
[42]: NB. 10 nearest albums
      10 fmtad /:~ mad
      1042.94 - Ghana 1970's
      3596.33 - Zambia Eclipse Trip
      4678.38 - ACS School Trips 1960's
      5310.90 - Beirut Lebanon 1960's
      6378.44 - Iran 1960's
      6735.58 - Barbados Late 1970's
      6736.08 - Diving at Bellairs Barbados BW
      6884.68 - South America 1979
      7657.01 - Briefly Bermuda
      8665.71 - New York 2005
[43]: NB. 10 furthest albums
      10 fmtad \:~ mad
     17794.80 - Enewetak Atoll 1980's
     16610.10 - Hawaii 2018
     12604.47 - 63
     12552.96 - California Captures
     12362.69 - Seattle Vancouver 2020
     12362.54 - GPS Extremes
     12249.74 - Inlaws Outlaws and Friends
     12218.38 - Along the Yukon River
     12129.49 - Logos Screenshots Covers
     12104.15 - Improvised Imaging Devices
     0.1.23 All done - thanks for playing!
```