

SEVIS Records Viz by Country of Citizenship

April 9, 2024

```
[1]: # for ease of viewing on Jupyter NBViewer
      # pip install plotly
```

```
[2]: # import relevant libraries
      import tabula
      import pandas as pd
      import plotly.express as px
      import plotly.figure_factory as ff
      import plotly.graph_objects as go
```

```
[3]: my_file = '/Users/tinashem/Github Repos/CareerPalz/2022_Top500_F-1_Schools.pdf'

      my_table = tabula.read_pdf(my_file, lattice=True, pages='all',
      ↪pandas_options={'header': None})

      len(my_table)
```

```
[3]: 11
```

```
[4]: # type(my_table[0])
```

```
[5]: [print(x) for x in my_table]
```

	0	1
	School Name	Total SEVIS IDs
0		
1	New York University	21,453
2	Northeastern University	21,385
3	Columbia University in the City of New York	20,347
4	University of Southern California	18,437
5	Arizona State University	15,855
6	University of Illinois	15,231
7	Boston University	14,150
8	Purdue University	12,389
9	University of California San Diego	12,250
10	University of California at Berkeley	11,489
11	University of Michigan	11,329
12	University of Washington	11,200
13	The Pennsylvania State University	10,481

14	The University of Texas at Dallas	10,155
15	University of California, Los Angeles	10,091
16	Carnegie Mellon University	9,848
17	University of Pennsylvania	9,357
18	University of Wisconsin-Madison	9,053
19	UNIVERSITY OF CALIFORNIA, IRVINE	8,964
20	University of California, Davis	8,830
21	Cornell University	8,800
22	The University of Texas at Arlington	8,792
23	University of North Texas	8,713
24	Georgia Institute of Technology	8,133
25	State University of New York at Buffalo	7,895
26	Harvard University	7,757
27	The Ohio State University	7,668
28	University of the Cumberland	7,563
29	Texas A&M University	7,355
30	The University of Chicago	7,273
31	University of South Florida	7,220
32	New York University	6,763
33	University of Minnesota	6,744
34	University of Florida	6,696
35	Duke University, & Health Sys.	6,593
36	University of Maryland	6,169
37	Indiana University	6,151
38	University of Texas at Austin	6,130
39	Washington University in St. Louis	6,006
40	Northwestern University	5,993
41	Syracuse University	5,918
	0	1
0	Stanford University	5,887
1	University of Cincinnati	5,614
2	University of Illinois at Chicago	5,521
3	North Carolina State University	5,458
4	Johns Hopkins University-Homewood Campus	5,448
5	University of Rochester	5,430
6	University of Houston-System	5,386
7	Stevens Institute of Technology	5,316
8	Michigan State University	5,301
9	Massachusetts Institute of Technology	5,279
10	The New School	5,241
11	San Jose State University	5,194
12	State University of New York at Stony Brook	5,092
13	University of California, Santa Barbara	5,004
14	University of Massachusetts Amherst	4,906
15	Yale University	4,710
16	University of Arizona	4,628
17	The George Washington University	4,367
18	Florida International University	4,094

19	George Mason University	4,087
20	Campbellsville University	4,055
21	University of Pittsburgh	4,033
22	Texas Tech University	3,937
23	Georgia State University	3,920
24	University of Utah	3,906
25	Savannah College of Art and Design	3,857
26	Cleveland State University	3,833
27	Illinois Institute of Technology	3,792
28	Trine University	3,721
29	Harrisburg University of Science & Technology	3,672
30	University of Miami	3,618
31	New Jersey Institute of Technology	3,602
32	Iowa State University of Science and Technology	3,573
33	UNIVERSITY OF CENTRAL MISSOURI	3,510
34	Westcliff University	3,498
35	University of Colorado Boulder	3,468
36	University of Connecticut	3,352
37	University of California, Riverside	3,328
38	University of New Haven	3,327
39	Emory University	3,308
40	Rutgers, the State University of New Jersey	3,281
41	University of Virginia	3,274
42	Drexel University	3,259
43	Wichita State University	3,248
44	School of Visual Arts	3,238
45	Rochester Institute of Technology	3,145
46	Oregon State University	3,090
	0	1
0	Virginia Polytechnic Institute and State Unive...	3,075
1	Rutgers, the State University of New Jersey	3,013
2	Georgetown University	3,006
3	PACE UNIVERSITY	2,969
4	Rice University	2,926
5	Case Western Reserve University	2,924
6	University of Central Florida	2,904
7	Brown University	2,874
8	Houston Community College System	2,838
9	AUBURN UNIVERSITY	2,757
10	University of North Carolina at Chapel Hill	2,748
11	University of North Carolina at Charlotte	2,723
12	State University of New York at Binghamton	2,682
13	Princeton University	2,639
14	University of Maryland, Baltimore County	2,636
15	University of Delaware	2,623
16	The University of Georgia	2,560
17	Florida State University	2,537
18	Pratt Institute	2,513

19	University of Missouri-Kansas City	2,496
20	Berklee College of Music	2,476
21	Temple University--A Commonwealth University	2,437
22	Academy of Art University	2,430
23	University of Notre Dame du Lac	2,322
24	Hult International Business School	2,317
25	The Vanderbilt University	2,317
26	Santa Monica College	2,315
27	University of Dayton	2,292
28	University of Nebraska-Lincoln	2,254
29	Brigham Young University - Idaho	2,196
30	Brandeis University	2,177
31	The University of Memphis	2,158
32	Indiana University	2,155
33	San Diego State University	2,150
34	University of Kansas	2,071
35	Minnesota State University, Mankato	2,067
36	California State University Fullerton	2,064
37	Sacred Heart University	2,060
38	The University of Toledo	2,056
39	University of San Francisco	2,056
40	The Johns Hopkins University	2,050
41	California State University Long Beach	2,050
42	Oklahoma State University	2,049
43	Boston College	2,039
44	University of South Carolina	2,017
45	New England College	2,009
46	The City University of New York	2,005
	0	1
0	Florida Institute of Technology	1,982
1	Colorado State University	1,981
2	The University of Iowa	1,973
3	Louisiana State University and A&M College	1,971
4	Clemson University	1,934
5	University of Massachusetts Boston	1,931
6	Washington State University	1,915
7	University of California, Santa Cruz	1,913
8	University of Oklahoma	1,908
9	University of Alabama at Birmingham	1,891
10	Kent State University	1,885
11	California State University, Northridge	1,877
12	Tufts University	1,876
13	Fordham University	1,876
14	The American University	1,854
15	Maharishi International University	1,853
16	Teachers College, Columbia University	1,835
17	The University of Texas at El Paso	1,812
18	Babson College	1,801

19	Dartmouth College	1,795
20	Rensselaer Polytechnic Institute	1,784
21	SANTA CLARA UNIVERSITY	1,784
22	University of Bridgeport	1,777
23	Brigham Young University	1,767
24	Virginia Polytechnic Institute and State Unive...	1,767
25	University at Albany, State University of NY	1,756
26	ArtCenter College of Design	1,755
27	Miami University	1,708
28	Wright State University	1,700
29	University of Wisconsin Milwaukee	1,695
30	Dallas College	1,670
31	Texas A&M University-Commerce	1,663
32	Monroe College	1,634
33	West Virginia University	1,629
34	University of Kentucky	1,599
35	Clark University	1,590
36	New York Institute of Technology	1,589
37	Gannon University	1,585
38	Saint Louis University	1,583
39	University of Missouri-Columbia	1,580
40	Central Michigan University	1,578
41	St. Cloud State University	1,572
42	University of Arkansas	1,569
43	Southern Methodist University	1,565
44	Worcester Polytechnic Institute	1,564
45	San Francisco State University (SFSU)	1,562
46	Lewis University	1,528
	0	1
0	University of Massachusetts Lowell	1,518
1	School of the Art Institute of Chicago	1,514
2	Northern Illinois University	1,510
3	University of Colorado Denver	1,508
4	Lamar University	1,501
5	Portland State University	1,495
6	Embry-Riddle Aeronautical University	1,478
7	Rhode Island School of Design	1,455
8	The University of Tennessee	1,452
9	Southern Illinois University Edwardsville	1,451
10	Northwest Missouri State University	1,451
11	California State University, East Bay	1,450
12	Southeast Missouri State University	1,447
13	Rutgers, the State University of New Jersey	1,446
14	University of Michigan - Dearborn	1,435
15	Suffolk University	1,431
16	The University of Alabama	1,398
17	Lehigh University	1,397
18	Kansas State University	1,386

19	Tulane University	1,354
20	Florida Atlantic University	1,353
21	Northeastern University	1,338
22	Fashion Institute of Technology, State Univers...	1,335
23	Wayne State University	1,316
24	University of Texas at San Antonio	1,316
25	University of New Mexico	1,307
26	Kennesaw State University	1,306
27	University of Hawaii at Manoa	1,297
28	The Johns Hopkins University: Medical Institut...	1,294
29	Bentley University	1,285
30	Western Illinois University	1,283
31	Missouri State University	1,276
32	Texas A&M University-Kingsville	1,270
33	DePaul University	1,265
34	Southern Arkansas University	1,263
35	University of Oregon	1,261
36	Loyola Marymount University	1,255
37	Michigan Technological University	1,240
38	University of Missouri	1,234
39	Auburn University at Montgomery	1,231
40	Ohio University	1,229
41	Wake Forest University	1,217
42	Saint Peter's University	1,211
43	University of Nevada, Las Vegas	1,191
44	Coast Community College District	1,185
45	Washington University of Science and Technology	1,181
46	Savannah College of Art and Design	1,173
	0	1
0	University of Houston-Clear Lake	1,172
1	DePaul University	1,170
2	The Pennsylvania State University	1,151
3	University of New Haven	1,146
4	Seattle University	1,136
5	Arkansas State University	1,133
6	Hult International Business School	1,126
7	Mississippi State University	1,124
8	WESTERN MICHIGAN UNIVERSITY	1,121
9	Baylor University	1,117
10	ASA College	1,107
11	The University of Tampa	1,106
12	Lindsey Wilson College	1,093
13	Texas State University	1,082
14	Nova Southeastern University	1,080
15	Hawaii Pacific University	1,079
16	Eastern Illinois University	1,077
17	Virginia Commonwealth University	1,068
18	Saint Leo University, Inc.	1,063

19	University of Denver	1,043
20	UNIVERSITY OF CENTRAL OKLAHOMA	1,042
21	Pepperdine University	1,039
22	Southern Illinois University Carbondale	1,034
23	Emerson College	1,031
24	Campbellsville University	1,029
25	Green River College	1,014
26	Ensign College	1,004
27	California College of the Arts	997
28	California State Polytechnic University Pomona	996
29	The City University of New York	991
30	California Institute of Technology	977
31	South Dakota State University	976
32	Illinois State University	971
33	The University of Texas Rio Grande Valley	969
34	New Mexico State University	956
35	California State University, Sacramento	953
36	California State University	947
37	MCPHS University	946
38	INTERNATIONAL AMERICAN UNIVERSITY	932
39	North Dakota State University	930
40	University of Idaho	912
41	University of Louisville	911
42	Rowan University	909
43	New York Film Academy	904
44	Howard University	902
45	Northern Arizona University	901
46	Bellevue College	882
	0 1	
0	Underwood University	864
1	University of Illinois Springfield	860
2	CALIFORNIA STATE UNIVERSITY, LOS ANGELES	859
3	Liberty University	851
4	Wilmington University	842
5	WESTERN MICHIGAN UNIVERSITY	841
6	University of Nevada, Reno	841
7	Bowling Green State University	839
8	Northeastern University	838
9	Santa Barbara City College District	837
10	Columbia University in the City of New York	835
11	Andrews University	829
12	Old Dominion University	827
13	The University of Mississippi	826
14	Hofstra University	825
15	Governors State University	821
16	Edmonds College	817
17	Long Island University	808
18	Georgetown University	807

19	Oakland University	803
20	University of North Dakota	791
21	Texas Christian University	787
22	Youngstown State University	786
23	Grand Canyon University	784
24	Mount Holyoke College	770
25	University of Nebraska	765
26	Concordia University - St. Paul	757
27	Middle Tennessee State University	754
28	Southern New Hampshire University	753
29	The College of William and Mary	753
30	Minerva University	751
31	SKEMA BUSINESS SCHOOL	750
32	Dallas Baptist University	749
33	Lindenwood University	741
34	St. John's University	738
35	Lynn University	737
36	The City University of New York	737
37	St. Francis College	732
38	Wilmington University	730
39	Valencia College	724
40	Colorado School of Mines	716
41	Webster University	710
42	Adelphi University	709
43	The City University of New York	708
44	Christian Brothers University	704
45	Lawrence Technological University	698
46	The University of Akron	697
	0	1
0	The City University of New York	696
1	Cornell University	695
2	University of San Diego	693
3	Grand Valley State University	692
4	The University of Southern Mississippi	692
5	Manhattan School of Music	691
6	University of New Hampshire	686
7	University of the Potomac	682
8	Oral Roberts University	675
9	University of Wyoming	669
10	Loyola University Chicago	666
11	Collin County Community College District	663
12	The University of North Carolina at Greensboro	661
13	Park University	661
14	Shoreline Community College	661
15	Texas A&M University - Corpus Christi	661
16	University of Louisiana at Lafayette	659
17	Bunker Hill Community College	658
18	University of North America	658

19	University of Washington, Bothell	657
20	Rivier University	653
21	University of the Pacific	650
22	Trine University	648
23	Pasadena City College	646
24	Full Sail University	646
25	Southern Utah University	644
26	Maryland Institute College of Art	638
27	Valparaiso University	628
28	INDIANA INSTITUTE OF TECHNOLOGY	627
29	Missouri Valley College	626
30	University of Maine	625
31	The University of Texas Health Science Center ...	623
32	Midwestern State University	620
33	UTAH VALLEY UNIVERSITY	620
34	University of St. Thomas	619
35	Chapman University	618
36	California Institute of the Arts	616
37	University of Southern California	615
38	University of Massachusetts Dartmouth	612
39	Eastern Michigan University	607
40	California State University, San Bernardino	606
41	Bradley University	601
42	Barnard College	601
43	Oklahoma Christian University	600
44	Fordham University	600
45	Johns Hopkins University Schl of Advanced Intl...	600
46	University of Connecticut	598
	0	1
0	The University of Findlay	598
1	Indiana Wesleyan University	597
2	Carnegie Mellon University	592
3	Utah State University	587
4	University of North Alabama	586
5	Stanton University	583
6	Calvin University	580
7	Northwestern University	577
8	McNeese State University	567
9	The City University of New York	565
10	East Central University	562
11	Seattle Colleges	561
12	University of Missouri-St. Louis	558
13	Montclair State University	558
14	Pensacola Christian College, Inc.	556
15	Villanova University	553
16	Northern Kentucky University	551
17	Purdue University	550
18	Denison University	547

19	Morgan State University	546
20	University of Arkansas at Little Rock	546
21	Marist College	543
22	Duquesne University	543
23	Purdue University	539
24	Southern California Institute of Architecture	538
25	Franklin & Marshall College	537
26	The University of Louisiana at Monroe	533
27	East Tennessee State University	532
28	Georgia Southern University	530
29	Miami Dade College	526
30	The University of Alabama in Huntsville	519
31	Fairleigh Dickinson University	518
32	Montana State University - Bozeman	517
33	University of Central Arkansas	514
34	Wesleyan University	512
35	The Culinary Institute of America	507
36	The University of Tulsa	504
37	Miami Dade College	504
38	Smith College	502
39	University of South Dakota	502
40	Augustana College	500
41	The University of Vermont	489
42	St. Thomas University	487
43	Grinnell College	487
44	Ringling College of Art and Design	486
45	North Carolina Agricultural and Technical Stat...	480
46	University of Hartford	480
	0	1
0	Brigham Young University-Hawaii	480
1	Wellesley College	478
2	Biola University	475
3	University of Connecticut	473
4	California Polytechnic State University, San L...	473
5	Franklin University	471
6	The City University of New York	467
7	Lincoln University	466
8	DePauw University	465
9	The University of Texas at Tyler	465
10	California Baptist University	461
11	Florida National University	460
12	Catholic University of America	459
13	Claremont Graduate University	458
14	ATLANTIS UNIVERSITY	457
15	Louisiana Tech University	457
16	University of South Alabama	452
17	Marquette University	452
18	Middlebury College	450

19	Marymount University	448
20	Sam Houston State University	442
21	Truman State University	440
22	California Lutheran University	440
23	St. Olaf College	440
24	University of Washington Tacoma	439
25	Barry University	438
26	University of Richmond	436
27	The College of Wooster	430
28	Musicians Institute	430
29	Macalester College	430
30	University of the Potomac	429
31	Oberlin College	427
32	Weber State University	427
33	University of La Verne	425
34	University of Houston-Downtown	424
35	Rochester University	424
36	University of Detroit Mercy	423
37	Trinity College	421
38	Bergen Community College	421
39	North American University	419
40	Goldey-Beacom College	419
41	Washington University of Virginia	418
42	University of Hawaii - Kapiolani Community Col...	417
43	Broward College	417
44	The Fashion Institute of Design & Merchandisin...	416
45	Murray State University	415
46	UNIVERSITY OF CENTRAL MISSOURI	413
	0	1
0	Otis College of Art and Design	410
1	University of Rhode Island	406
2	University of North Florida	406
3	New England Conservatory	403
4	Loma Linda University (LLU)	402
5	Tennessee Technological University	402
6	Towson University	399
7	Hillsborough Community College	399
8	Clemson University	398
9	Foothill College	398
10	Everglades College, Inc., DBA Keiser University	397
11	Concordia University	394
12	University of California, Merced	394
13	Idaho State University	391
14	Irvine Valley College	390
15	Salt Lake Community College	386
16	Drew University	385
17	Bard College	385
18	Ball State University	384

19	California State University San Marcos	384
20	Troy University	383
21	Colgate University	382
22	Clarkson University	381
23	Indiana University of Pennsylvania	381
24	CENTRAL PIEDMONT COMMUNITY COLLEGE	380
25	Virginia Christian University	380
26	Embry-Riddle Aeronautical University - Prescott...	379
27	Southwestern Baptist Theological Seminary	377
28	Pittsburg State University	377
29	College of San Mateo	377
30	Texas Woman's University	376
31	State University of New York at New Paltz	376
32	Ottawa University	375
33	Mt. San Antonio Community College District	373
34	Johnson & Wales University	370
35	Cornell University	370

[5]: [None, None, None, None, None, None, None, None, None, None]

```
[6]: result_df = pd.concat(my_table, ignore_index=True)
result_df
```

```
[6]:
```

	0	1
0	School Name	Total SEVIS IDs
1	New York University	21,453
2	Northeastern University	21,385
3	Columbia University in the City of New York	20,347
4	University of Southern California	18,437
..
496	State University of New York at New Paltz	376
497	Ottawa University	375
498	Mt. San Antonio Community College District	373
499	Johnson & Wales University	370
500	Cornell University	370

[501 rows x 2 columns]

```
[7]: result_df.columns = result_df.iloc[0]
```

```
[8]: result_df
```

```
[8]:
```

	School Name	Total SEVIS IDs
0	School Name	Total SEVIS IDs
1	New York University	21,453
2	Northeastern University	21,385
3	Columbia University in the City of New York	20,347
4	University of Southern California	18,437

```

..
496 State University of New York at New Paltz 376
497 Ottawa University 375
498 Mt. San Antonio Community College District 373
499 Johnson & Wales University 370
500 Cornell University 370

```

[501 rows x 2 columns]

```
[9]: result_df.drop(0, inplace=True)
```

```
[10]: result_df.reset_index(inplace=True)
result_df
```

```
[10]: 0 index School Name Total SEVIS IDs
0 1 New York University 21,453
1 2 Northeastern University 21,385
2 3 Columbia University in the City of New York 20,347
3 4 University of Southern California 18,437
4 5 Arizona State University 15,855
..
495 496 State University of New York at New Paltz 376
496 497 Ottawa University 375
497 498 Mt. San Antonio Community College District 373
498 499 Johnson & Wales University 370
499 500 Cornell University 370

```

[500 rows x 3 columns]

```
[11]: result_df.drop('index', inplace=True, axis=1)
result_df
```

```
[11]: 0 School Name Total SEVIS IDs
0 New York University 21,453
1 Northeastern University 21,385
2 Columbia University in the City of New York 20,347
3 University of Southern California 18,437
4 Arizona State University 15,855
..
495 State University of New York at New Paltz 376
496 Ottawa University 375
497 Mt. San Antonio Community College District 373
498 Johnson & Wales University 370
499 Cornell University 370

```

[500 rows x 2 columns]

```
[12]: my_pdf = '/Users/tinashem/Github Repos/CareerPalz/2022_AllStudentsByCOC.pdf'

my_df = tabula.read_pdf(my_pdf, lattice=True, pages='all',
    ↪pandas_options={'header': None})

len(my_df)
```

[12]: 6

```
[13]: my_df
```

```
[13]: [
0          Country of Citizenship  Total SEVIS IDs
1                CHINA          324,196
2                INDIA          297,151
3  REPUBLIC OF KOREA (SOUTH KOREA)    62,617
4                CANADA          41,392
5                BRAZIL          37,904
6                VIETNAM          29,742
7                JAPAN          26,519
8                TAIWAN          26,225
9          SAUDI ARABIA          24,485
10               NIGERIA          22,935
11               MEXICO          22,715
12               COLOMBIA          20,744
13               NEPAL          20,344
14          BANGLADESH          18,184
15               GERMANY          16,097
16          UNITED KINGDOM          15,144
17               FRANCE          14,713
18               SPAIN          14,444
19               TURKEY          14,009
20               IRAN          12,183
21          PAKISTAN          11,993
22               ITALY          11,435
23          INDONESIA          8,932
24          THAILAND          8,777
25               RUSSIA          7,625
26               PERU          7,560
27               GHANA          7,537
28               KUWAIT          7,509
29          HONG KONG          7,500
30          VENEZUELA          7,131
31          PHILIPPINES          6,278
32          AUSTRALIA          5,990
33          MALAYSIA          5,887
34               KENYA          5,792
```

35	ECUADOR	5,650
36	SINGAPORE	5,166
37	ARGENTINA	4,996
38	EGYPT	4,855
39	CHILE	4,697
40	SWEDEN	4,570
41	BAHAMAS, THE	4,510
42	JAMAICA	4,492
43	ETHIOPIA	4,274,

0

0	Total SEVIS IDS
1	324,196
2	297,151
3	62,617
4	41,392
5	37,904
6	29,742
7	26,519
8	26,225
9	24,485
10	22,935
11	22,715
12	20,744
13	20,344
14	18,184
15	16,097
16	15,144
17	14,713
18	14,444
19	14,009
20	12,183
21	11,993
22	11,435
23	8,932
24	8,777
25	7,625
26	7,560
27	7,537
28	7,509
29	7,500
30	7,131
31	6,278
32	5,990
33	5,887
34	5,792
35	5,650
36	5,166

37	4,996	
38	4,855	
39	4,697	
40	4,570	
41	4,510	
42	4,492	
43	4,274,	
	0	1
0	NETHERLANDS	4,262
1	SOUTH AFRICA	4,036
2	JORDAN	3,925
3	UKRAINE	3,806
4	SWITZERLAND	3,737
5	KAZAKHSTAN	3,731
6	BURMA	3,592
7	SRI LANKA	3,570
8	ISRAEL	3,549
9	NORWAY	3,474
10	DOMINICAN REPUBLIC	3,414
11	PANAMA	3,363
12	MONGOLIA	3,282
13	HONDURAS	3,253
14	GREECE	2,949
15	POLAND	2,853
16	OMAN	2,546
17	CONGO (KINSHASA)	2,543
18	ZIMBABWE	2,325
19	LEBANON	2,319
20	MOROCCO	2,236
21	NEW ZEALAND	2,084
22	BELGIUM	1,994
23	BOLIVIA	1,909
24	DENMARK	1,909
25	RWANDA	1,887
26	COSTA RICA	1,861
27	TRINIDAD AND TOBAGO	1,800
28	SERBIA	1,798
29	UZBEKISTAN	1,736
30	IRELAND	1,731
31	PORTUGAL	1,728
32	UNITED ARAB EMIRATES	1,725
33	GUATEMALA	1,668
34	ALBANIA	1,665
35	COTE D'IVOIRE	1,643
36	AUSTRIA	1,557
37	UGANDA	1,525
38	EL SALVADOR	1,485

39	HAITI	1,377
40	TANZANIA	1,373
41	CAMEROON	1,341
42	TUNISIA	1,330
43	CZECH REPUBLIC	1,277
44	ROMANIA	1,213
45	CAMBODIA	1,197
46	KYRGYZSTAN	1,197,
	0	1
0	HUNGARY	1,165
1	AZERBAIJAN	1,135
2	GEORGIA	1,078
3	ANGOLA	947
4	PARAGUAY	848
5	FINLAND	830
6	ARMENIA	806
7	BULGARIA	798
8	SENEGAL	798
9	ZAMBIA	786
10	BELARUS	757
11	NICARAGUA	719
12	LIBYA	712
13	CROATIA	649
14	DOMINICA	628
15	QATAR	609
16	AFGHANISTAN	593
17	BURKINA FASO	582
18	ALGERIA	580
19	SLOVAKIA	580
20	ICELAND	573
21	URUGUAY	572
22	YEMEN	562
23	CYPRUS	522
24	BELIZE	518
25	TURKMENISTAN	518
26	LITHUANIA	506
27	MALAWI	499
28	GUYANA	494
29	BERMUDA	484
30	IRAQ	454
31	MACAU	448
32	BARBADOS	446
33	SUDAN	441
34	WEST BANK	437
35	BAHRAIN	426
36	MALI	417
37	LATVIA	406

38	SYRIA	406
39	EQUATORIAL GUINEA	397
40	GABON	397
41	GAMBIA, THE	392
42	LIBERIA	387
43	SIERRA LEONE	358
44	BENIN	352
45	BOSNIA AND HERZEGOVINA	346
46	MACEDONIA	345,
	0	1
0	MAURITIUS	327
1	BOTSWANA	325
2	TAJIKISTAN	323
3	MADAGASCAR	321
4	SAINT LUCIA	310
5	MONTENEGRO	300
6	SLOVENIA	292
7	NIGER	277
8	ANTIGUA AND BARBUDA	276
9	TOGO	271
10	KOSOVO	269
11	SAINT KITTS AND NEVIS	263
12	ESTONIA	255
13	MOLDOVA	243
14	SWAZILAND	243
15	BURUNDI	232
16	GRENADA	227
17	MOZAMBIQUE	226
18	CAYMAN ISLANDS	224
19	BHUTAN	211
20	CONGO (BRAZZAVILLE)	205
21	LAOS	177
22	ERITREA	172
23	SOUTH SUDAN	155
24	CUBA	154
25	GAZA STRIP	151
26	PAPUA NEW GUINEA	150
27	NAMIBIA	149
28	CURACAO	147
29	SAINT VINCENT AND THE GRENADINES	147
30	LUXEMBOURG	144
31	GUINEA	132
32	SOMALIA	130
33	MALTA	108
34	ARUBA	89
35	CAPE VERDE	89
36	CHAD	85

37	SURINAME	78
38	LESOTHO	77
39	TURKS AND CAICOS ISLANDS	74
40	FIJI	72
41	MAURITANIA	62
42	BRITISH VIRGIN ISLANDS	61
43	STATELESS	50
44	SINT MAARTEN	41
45	BRUNEI	39
46	MALDIVES	36,
	0	1
0	TONGA	34
1	ANDORRA	33
2	FRENCH POLYNESIA	23
3	MONACO	22
4	CENTRAL AFRICAN REPUBLIC	21
5	LIECHTENSTEIN	20
6	SAINT MARTIN	20
7	SAMOA	20
8	TIMOR-LESTE	18
9	GUINEA-BISSAU	17
10	SEYCHELLES	16
11	ANGUILLA	14
12	KIRIBATI	13
13	SOLOMON ISLANDS	12
14	BASSAS DA INDIA	10
15	SAN MARINO	9
16	ISLE OF MAN	8
17	JERSEY	8
18	REUNION	8
19	COMOROS	7
20	UNKNOWN	7
21	MARTINIQUE	6
22	VANUATU	5
23	BRITISH INDIAN OCEAN TERRITORY	4
24	DJIBOUTI	4
25	GIBRALTAR	4
26	NEW CALEDONIA	4
27	FRENCH GUIANA	3
28	GUERNSEY	3
29	MONTSERRAT	3
30	SAO TOME AND PRINCIPE	3
31	FAROE ISLANDS	2
32	PALAU	2
33	GREENLAND	1
34	JAN MAYEN	1
35	NETHERLANDS ANTILLES	1

```

36          NEUTRAL ZONE  1
37          NIUE  1
38  SAINT PIERRE AND MIQUELON  1
39          TROMELIN ISLAND  1
40          TUVALU  1]

```

```

[14]: bigger_df = pd.concat(my_df, ignore_index=True)
      bigger_df

```

```

[14]:
0          0          1
0  Country of Citizenship  Total SEVIS IDS
1          CHINA          324,196
2          INDIA          297,151
3  REPUBLIC OF KOREA (SOUTH KOREA)          62,617
4          CANADA          41,392
..          ...          ...
265         NEUTRAL ZONE          1
266          NIUE          1
267  SAINT PIERRE AND MIQUELON          1
268          TROMELIN ISLAND          1
269         TUVALU          1

```

[270 rows x 2 columns]

```

[15]: bigger_df.columns = bigger_df.iloc[0]
      bigger_df.drop(0, inplace=True)
      bigger_df

```

```

[15]: 0          Country of Citizenship  Total SEVIS IDS
1          CHINA          324,196
2          INDIA          297,151
3  REPUBLIC OF KOREA (SOUTH KOREA)          62,617
4          CANADA          41,392
5          BRAZIL          37,904
..          ...          ...
265         NEUTRAL ZONE          1
266          NIUE          1
267  SAINT PIERRE AND MIQUELON          1
268          TROMELIN ISLAND          1
269         TUVALU          1

```

[269 rows x 2 columns]

```

[16]: # fig = px.choropleth(data_frame=bigger_df, locations='Country of Citizenship',
      ↪ locationmode='country names', color='Total SEVIS IDS')
      # fig.show()

```

```

# Plotly choropleth map
fig = go.Figure(go.Choropleth(
    locations=bigger_df['Country of Citizenship'], # Country codes or names
    locationmode='country names',
    z=bigger_df['Total SEVIS IDS'], # Data to be color-coded
    colorscale='Viridis',
    autocolorscale=False,
    marker_line_color='black', # Line color between countries
    colorbar_title='Number'
))

fig.update_layout(
    title_text='World SEVIS IDS',
    geo=dict(
        showcoastlines=True, # Display coastlines
    )
)

fig.show()

```

World SEVIS IDS



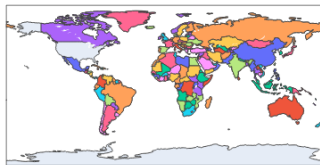
```

[17]: fig = px.choropleth(
    bigger_df,
    locations='Country of Citizenship', # Column specifying the country names
    locationmode='country names',
    color='Total SEVIS IDS', # Column specifying the population
    color_continuous_scale='Viridis', # Color scale
    labels={'Total SEVIS IDS': 'Total SEVIS IDS'}, # Labels for hover
    ↪information
    title='World SEVIS IDS' # Title of the plot
)

fig.update_geos(showcoastlines=True) # Display coastlines

fig.show()

```



```
[18]: bigger_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 269 entries, 1 to 269
Data columns (total 2 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Country of Citizenship  269 non-null    object
1   Total SEVIS IDS        225 non-null    object
dtypes: object(2)
memory usage: 4.3+ KB
```

```
[19]: bigger_df.columns
```

```
[19]: Index(['Country of Citizenship', 'Total SEVIS IDS'], dtype='object', name=0)
```

```
[20]: type(bigger_df['Total SEVIS IDS'].values[0])
bigger_df['Total SEVIS IDS'].values[0]
```

```
[20]: '324,196'
```

```
[21]: def convert_to_int(value):
    """
    Purpose: formatting the strings to remove commas and change data type to
    ↪ int data type
    Inputs: string to be formatted
    Returns: final_number, an int which is the result of the proper formatting
    """

    if isinstance(value, str):
        return int(value.replace(',', ''))
    else:
        return int(value)
```

```
non_null = bigger_df[bigger_df['Total SEVIS IDS'].notnull()]
```

```
non_null['Total SEVIS IDS'] = non_null['Total SEVIS IDS'].apply(convert_to_int)

non_null.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 225 entries, 1 to 269
Data columns (total 2 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Country of Citizenship  225 non-null    object
1   Total SEVIS IDS        225 non-null    int64
dtypes: int64(1), object(1)
memory usage: 5.3+ KB
```

```
[22]: type(bigger_df['Total SEVIS IDS'].values[0])
```

```
[22]: str
```

```
[23]: type(non_null['Total SEVIS IDS'].values[0])
```

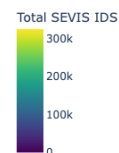
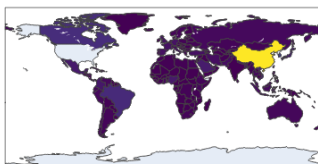
```
[23]: numpy.int64
```

```
[24]: fig = px.choropleth(
    non_null,
    locations='Country of Citizenship', # Column specifying the country names
    locationmode='country names',
    color='Total SEVIS IDS', # Column specifying the population
    color_continuous_scale='Viridis', # Color scale
    labels={'Total SEVIS IDS': 'Total SEVIS IDS'}, # Labels for hover_
    ↪information
    title='World SEVIS IDS' # Title of the plot
)

fig.update_geos(showcoastlines=True) # Display coastlines

fig.show()
```

World SEVIS IDS



```
[25]: non_null.head()
```

```
[25]: 0          Country of Citizenship  Total SEVIS IDS
      1                      CHINA          324196
      2                      INDIA          297151
      3  REPUBLIC OF KOREA (SOUTH KOREA)          62617
      4                      CANADA          41392
      5                      BRAZIL          37904
```

```
[26]: non_china = non_null.drop(1)

fig = px.choropleth(
    non_china,
    locations='Country of Citizenship', # Column specifying the country names
    locationmode='country names',
    color='Total SEVIS IDS', # Column specifying the population
    color_continuous_scale='Viridis', # Color scale
    labels={'Total SEVIS IDS': 'Total SEVIS IDS'}, # Labels for hover_
    ↪information
    title='World SEVIS IDS' # Title of the plot
)

fig.update_geos(showcoastlines=True) # Display coastlines

fig.show()
```

World SEVIS IDS



```
[27]: non_china_non_india = non_null.drop([1, 2])

fig = px.choropleth(
    non_china_non_india,
    locations='Country of Citizenship', # Column specifying the country names
    locationmode='country names',
    color='Total SEVIS IDS', # Column specifying the population
```



```

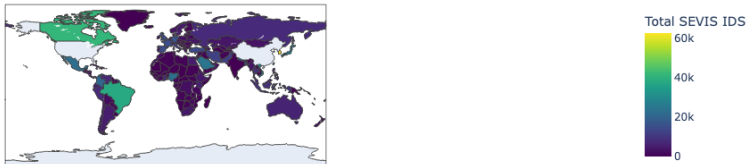
    color_continuous_scale='Viridis', # Color scale
    labels={'Total SEVIS IDS': 'Total SEVIS IDS'}, # Labels for hover
    ↪information
    title='World SEVIS IDS' # Title of the plot
)

fig.update_geos(showcoastlines=True) # Display coastlines

fig.show()

```

World SEVIS IDS



```

[28]: finding_india = non_null[non_null['Country of Citizenship'].str.
    ↪contains('India', case=False)]
finding_india

```

```

[28]: 0          Country of Citizenship  Total SEVIS IDS
      2                INDIA                297151
      243          BASSAS DA INDIA                10
      252  BRITISH INDIAN OCEAN TERRITORY                4

```

```

[29]: remove_bassas = non_china_non_india.drop(243)
finding_india_again = remove_bassas[remove_bassas['Country of Citizenship'].str.
    ↪contains('India', case=False)]
finding_india_again

```

```

[29]: 0          Country of Citizenship  Total SEVIS IDS
      252  BRITISH INDIAN OCEAN TERRITORY                4

```