CHL8010: Statistical Programming and Computation in Health Data

Week 4 In-class Assignment

2024-09-30

Perfect your GitHub repo

Some of you may still need to organize your GitHub repo. Use this time to do that. When you are confident with your repo, let me know – I will try to reproduce your code.

Your final data should have the following variables (you might have slightly different variable names).

```
finaldata <- read.csv(here("data", "finaldata.csv"), header = TRUE)
names(finaldata)
```

```
 [1] "country_name" "ISO"          "region"       "year"         "gdp1000"
 [6] "OECD"         "OECD2023"     "popdens"      "urban"        "agedep"
[11] "male_edu"     "temp"         "rainfall1000" "totdeath"     "armconf1"
[16] "matmor"       "infmor"       "neomor"       "un5mor"       "drought"
[21] "earthquake"
```

Observations from Canada should look like this...

```
finaldata %>%
  dplyr::filter(country_name == "Canada")
```

```
  country_name ISO           region year  gdp1000 OECD OECD2023  popdens
1       Canada CAN Northern America 2000 24.27100    1        1 66.19704
2       Canada CAN Northern America 2001 23.82206    1        1 66.45361
3       Canada CAN Northern America 2002 24.25534    1        1 66.71112
4       Canada CAN Northern America 2003 28.30046    1        1 66.96384
```

```
5        Canada CAN Northern America 2004 32.14368    1        1 67.21715
6        Canada CAN Northern America 2005 36.38251    1        1 67.47283
7        Canada CAN Northern America 2006 40.50406    1        1 67.73674
8        Canada CAN Northern America 2007 44.65990    1        1 67.99444
9        Canada CAN Northern America 2008 46.71051    1        1 68.25765
10       Canada CAN Northern America 2009 40.87631    1        1 68.53354
11       Canada CAN Northern America 2010 47.56208    1        1 68.80739
12       Canada CAN Northern America 2011 52.22370    1        1 69.04842
13       Canada CAN Northern America 2012 52.66909    1        1 69.27604
14       Canada CAN Northern America 2013 52.63517    1        1 69.50772
15       Canada CAN Northern America 2014 50.95600    1        1 69.76876
16       Canada CAN Northern America 2015 43.59614    1        1 69.98853
17       Canada CAN Northern America 2016 42.31560    1        1 70.21484
18       Canada CAN Northern America 2017 45.12943    1        1 70.40863
19       Canada CAN Northern America 2018 46.54864    1        1 70.63614
20       Canada CAN Northern America 2019 46.32867    1        1 70.83794
      urban   agedep male_edu     temp rainfall1000 totdeath armconf1 matmor
1  56.14335 46.34463 12.30281 5.486244    0.9971559       11        0      9
2  56.40270 45.89632 12.35258 6.469105    0.8644873       23        0     10
3  56.67093 45.46660 12.40182 5.979147    0.9460938        1        0     10
4  56.94365 45.07468 12.45053 5.416964    1.0189234        0        0     10
5  57.20020 44.67374 12.49870 5.556961    1.0008237        0        0     10
6  57.41671 44.26641 12.54635 6.187472    1.0367199        0        0     11
7  57.59143 43.96370 12.59349 6.895084    1.0917386        0        0     11
8  57.75691 43.83612 12.64015 5.900051    1.0134091        0        0     11
9  57.97905 43.85426 12.68634 5.650118    1.0693435        0        0     12
10 58.24228 43.94937 12.73207 5.398867    0.9928497        0        0     12
11 58.52809 44.13587 12.77735 6.781766    1.0379754        0        0     11
12 58.81437 44.53578 12.82218 6.269133    1.1343442        0        0     11
13 59.05573 45.18393 12.86660 7.249497    0.9747708        0        0     11
14 59.19713 45.95404 12.91059 5.954381    1.0282075        0        0     11
15 59.30361 46.75493 12.95414 5.584650    1.0377695        0        0     11
16 59.42627 47.59164 12.99723 6.436884    0.9632446        0        0     11
17 59.50521 48.41410 13.03988 7.184514    0.9677826        0        0     10
18 59.59325 49.14806 13.08210 6.539669    1.0995322        0        0     10
19 59.68433 49.80166 13.12388 6.539677    1.0991469        0        0     NA
20 59.75984 50.47739 13.16522 6.539633    1.0987523        0        0     NA
   infmor neomor un5mor drought earthquake
1     5.3    3.8    6.2       0          0
2     5.3    3.8    6.2       0          0
3     5.3    3.9    6.2       0          0
4     5.3    3.9    6.2       0          0
5     5.3    3.9    6.1       0          0
```

6	5.2	3.9	6.1	0	0
7	5.2	3.9	6.0	0	0
8	5.1	3.8	6.0	0	0
9	5.1	3.8	5.9	0	0
10	5.0	3.8	5.8	0	0
11	5.0	3.8	5.7	0	0
12	4.9	3.7	5.7	0	0
13	4.9	3.7	5.6	0	0
14	4.8	3.6	5.5	0	0
15	4.7	3.6	5.4	0	0
16	4.7	3.6	5.4	0	0
17	4.6	3.5	5.3	0	0
18	4.6	3.4	5.2	0	0
19	4.5	3.3	5.1	0	0
20	4.4	3.3	5.1	0	0

Observations from Ecuador should look like this…

```
finaldata %>%
  dplyr::filter(country_name == "Ecuador")
```

	country_name	ISO	region	year	gdp1000	OECD	OECD2023
1	Ecuador	ECU	Latin America and the Caribbean	2000	1.451531	0	0
2	Ecuador	ECU	Latin America and the Caribbean	2001	1.904814	0	0
3	Ecuador	ECU	Latin America and the Caribbean	2002	2.184209	0	0
4	Ecuador	ECU	Latin America and the Caribbean	2003	2.438344	0	0
5	Ecuador	ECU	Latin America and the Caribbean	2004	2.703566	0	0
6	Ecuador	ECU	Latin America and the Caribbean	2005	3.014310	0	0
7	Ecuador	ECU	Latin America and the Caribbean	2006	3.340841	0	0
8	Ecuador	ECU	Latin America and the Caribbean	2007	3.579032	0	0
9	Ecuador	ECU	Latin America and the Caribbean	2008	4.260433	0	0
10	Ecuador	ECU	Latin America and the Caribbean	2009	4.240703	0	0
11	Ecuador	ECU	Latin America and the Caribbean	2010	4.640246	0	0
12	Ecuador	ECU	Latin America and the Caribbean	2011	5.202656	0	0
13	Ecuador	ECU	Latin America and the Caribbean	2012	5.678456	0	0
14	Ecuador	ECU	Latin America and the Caribbean	2013	6.050355	0	0
15	Ecuador	ECU	Latin America and the Caribbean	2014	6.374631	0	0
16	Ecuador	ECU	Latin America and the Caribbean	2015	6.130587	0	0
17	Ecuador	ECU	Latin America and the Caribbean	2016	6.079089	0	0
18	Ecuador	ECU	Latin America and the Caribbean	2017	6.246404	0	0
19	Ecuador	ECU	Latin America and the Caribbean	2018	6.321349	0	0
20	Ecuador	ECU	Latin America and the Caribbean	2019	6.233258	0	0

	popdens	urban	agedep	male_edu	temp	rainfall1000	totdeath	armconf1
1	23.27432	36.19963	67.44216	7.738627	19.54855	1.4201653	0	0
2	23.39372	36.67994	66.57356	7.843942	19.66622	1.1667746	0	0
3	23.52087	37.08903	65.65488	7.949449	20.24695	1.4577981	2	0
4	23.58358	37.23792	64.71472	8.055240	20.05016	1.5781807	0	0
5	38.43743	37.39268	63.78049	8.161433	20.10136	1.0683450	26	1
6	38.55361	37.36968	62.86530	8.268176	19.88163	0.8555447	0	0
7	38.65018	37.47567	61.97042	8.375587	20.07087	1.1114502	0	0
8	38.76505	37.68172	61.11422	8.483729	19.49536	1.0899082	0	0
9	38.83977	37.67445	60.31015	8.592603	19.85711	1.6184816	0	0
10	38.92613	37.39437	59.55262	8.702180	20.39298	1.0870796	25	1
11	39.03066	37.26838	58.83793	8.812409	20.11160	1.7045703	0	0
12	39.09586	37.61553	58.16553	8.923172	19.86633	1.4518388	0	0
13	39.13343	38.00733	57.51051	9.034284	20.19000	1.7520003	0	0
14	39.18619	38.22511	56.84804	9.145523	19.85177	1.3735605	0	0
15	39.27871	38.12421	56.17001	9.256679	20.42252	1.2572257	0	0
16	39.38824	38.15633	55.46511	9.367582	20.95595	1.7284273	0	0
17	39.46201	38.45745	54.73369	9.478071	20.77476	1.3168761	0	0
18	39.53609	38.65993	53.99096	9.587993	20.53262	1.9544485	0	0
19	39.58380	38.87253	53.12249	9.697221	20.53714	1.9573265	0	0
20	39.75109	39.05144	52.29278	9.805670	20.54169	1.9602443	0	0

	matmor	infmor	neomor	un5mor	drought	earthquake
1	122	24.7	14.1	29.5	0	0
2	117	23.4	13.4	28.0	0	0
3	110	22.4	12.7	26.6	0	0
4	100	21.5	12.1	25.4	0	0
5	94	20.7	11.6	24.4	0	0
6	94	19.9	11.1	23.5	0	0
7	90	19.2	10.6	22.6	0	0
8	85	18.5	10.2	21.7	0	0
9	82	17.7	9.7	20.8	0	0
10	80	17.0	9.3	19.9	1	0
11	78	16.3	8.9	19.0	0	0
12	76	15.6	8.5	18.1	0	0
13	71	14.9	8.1	17.3	0	0
14	67	14.3	7.8	16.6	1	0
15	65	13.7	7.5	15.9	0	1
16	63	13.2	7.3	15.4	0	0
17	61	12.8	7.1	14.8	0	1
18	59	12.4	6.9	14.4	0	0
19	NA	12.0	6.9	13.9	0	0
20	NA	11.6	6.8	13.4	0	1

Exploratory data analysis

Use the rest of the class time to explore the final data that will be used for analysis starting next week. At the end of the class, write a summary of your findings and push your **Quarto document (pdf)** to your repo.