MUNI SCI

03 Seminar

Ladislava Řezníčková, MSc, PhD

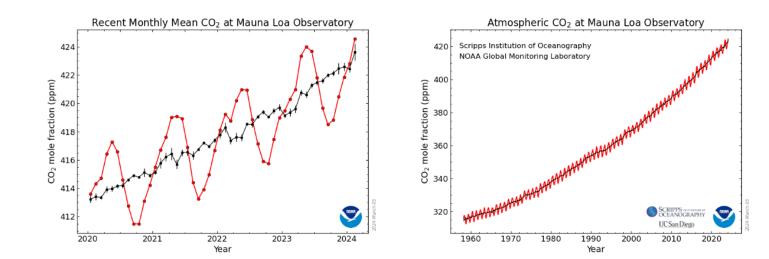
Content

- 1. Evaluation of global CO₂ emissions in relation to global mean surface temperature rise
- 2. Evaluation of the contribution of CO₂ concentrations from your state

CO2 emissions

 Anthropogenic CO₂ sources are part of our everyday activities and include those from power generation, transportation, industrial sources, chemical production, petroleum production, and agricultural practices. Many of these source types burn fossil fuels (coal, oil, and natural gas), with CO₂ emissions as a byproduct.

Monthly mean carbon dioxide measured at Mauna Loa Observatory, Hawaii. The carbon dioxide data on Mauna Loa constitute the longest record of direct measurements of CO₂ in the atmosphere.



February 2024: 424.55 ppm

420.30 ppm

February 2023:

- In the assignment, you will create a graph in Excel according to the instructions.
- You download data on global CO₂ emissions and then create a graph from this data. You will then do the same for your state.
- You can see how your state's CO₂ emissions have contributed to global warming at the link provided.

Please upload the finished exercise (worksheet) to the Information System (Study Materials – Homework Vaults) until March 25, 2024.

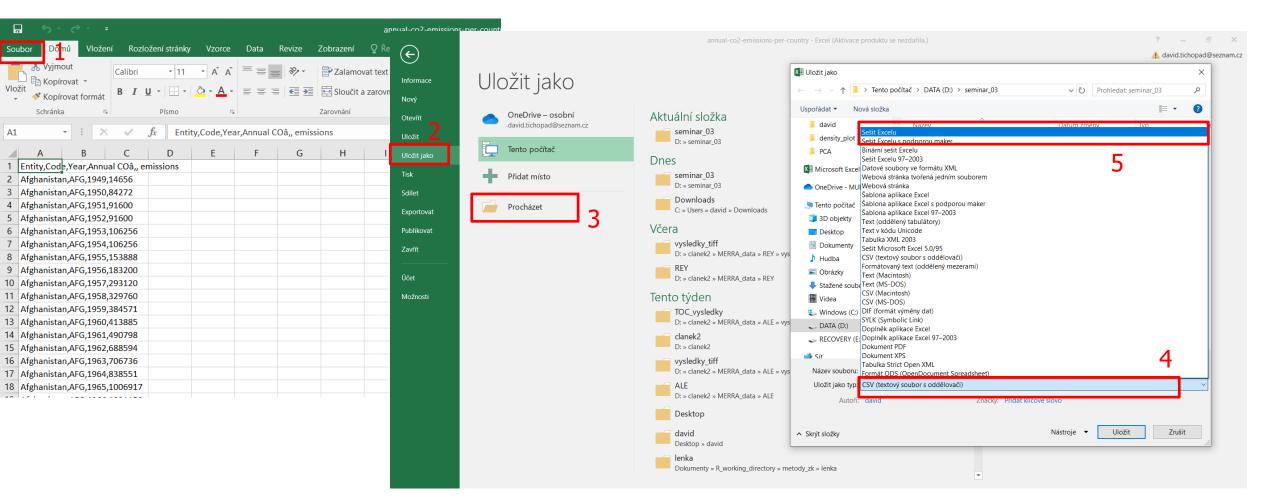
- open this link: <u>CO₂ and Greenhouse Gas Emissions Data Explorer Our</u> <u>World in Data</u>
- choose the items in the menu as shown:
- then click on download -

CO ₂ and Greenhouse Gas Emissions Data Explorer Explore data on greenhouse gas emissions. Download this dataset	GAS OR WARMING ACCOUNTING FUEL OR LAND USE CHANGE COUNT CO2 Image: Territorial or consumption-based All fossil emissions Per country
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- a menu will open and download full data in .csv format according to the image
- save the downloaded CSV file to your chosen folder

CO ₂ and Greenhouse Gas Emissions Data Explorer Explore data on greenhouse gas emissions. Download this dataset	GAS OR WARMING	ACCOUNTING FUEL OR LAND USE CHANGE COUNT Territorial All fossil emissions Per country	~ R	elative to world total
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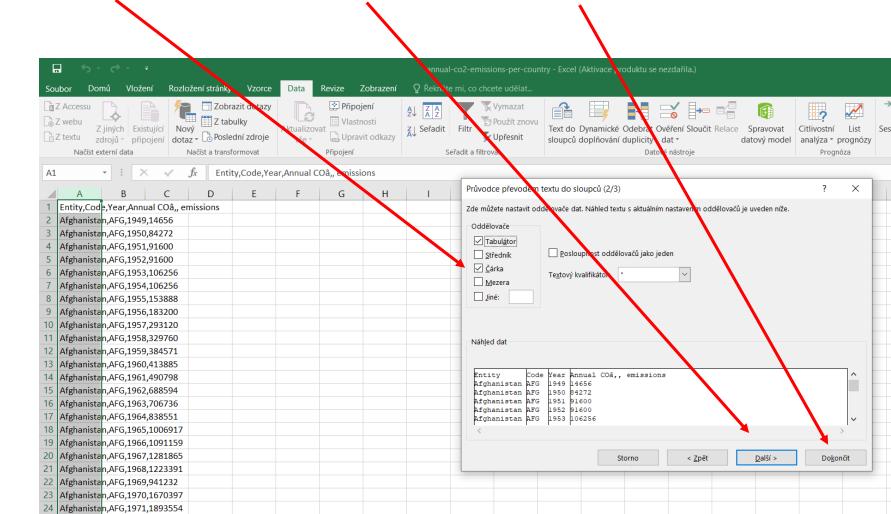
open the CSV file and then save it as an Excel workbook



• open the saved Excel and follow the steps in the image

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29788	World		OWIE)_WF	1767	12152509				
29789	World		OWIE)_WF	1768	12466936				/
29790	World		OWIE)_WF	1769	12780074				
29791	World		OWIE)_WF	1770	13097216				
29792	World		OWIE)_WF	1771	13369488				
29793	World		OWIE)_WF	1772	13623507				
29794	World		OWIE)_WF	1773	13808138				
29795	World		OWIE	_WF	1774	14012415				
29796	World		OWI)_WF	1775	14338920				
29797	World		OWIE)_WF	1776	14654124				
29798	World		OWIE)_WF	1777	14959537				-
	World		owir			15243483				
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1	Entity	Code	Year		- CO2		
2	World	OWID V	VF	1750	9305937		
3	World	OWID_V		1751	9407229		
4	World			1752	9505168		
5	World	OWID V		1753	9610490		
6	World	OWID_V		1754	9733580		
7	World			1755	9793468		
8	World			1756	9909914		
9	World	OWID V		1757	10093936		
10	World		VF	1758	10216358		
11	World			1759	10338854		
12	World	OWID V	VF	1760	10514331		
13	World			1761	10747885		
14	World	OWID V	VF	1762	10952198		
15	World	OWID V	VF	1763	11191592		
16	World		VF	1764	11396982		
17	World		VF	1765	11643486		
18	World	OWID V	VF	1766	11876080		
19	World	OWID_V		1767	12152509		
20	World	owid_v		1768	12466936		
21	World	OWID_V	VF	1769	12780074		
22	World	OWID_V	VF	1770	13097216		
23	World	OWID_V	VF	1771	13369488		
24	World	OWID_V	VF	1772	13623507		
25	World	OWID_V	VF	1773	13808138		
26	World	OWID_V		1774	14012415		
27	World	OWID_V	VF	1775	14338920		
28	World	OWID_V	VF	1776	14654124		
	World	OWID V		1777	14959537		

Vyberte cíl a stiskněte klávesu Enter nebo zvolte příkaz Vložit.

• now it is necessary to convert the values in tons to billion tons (Gt)

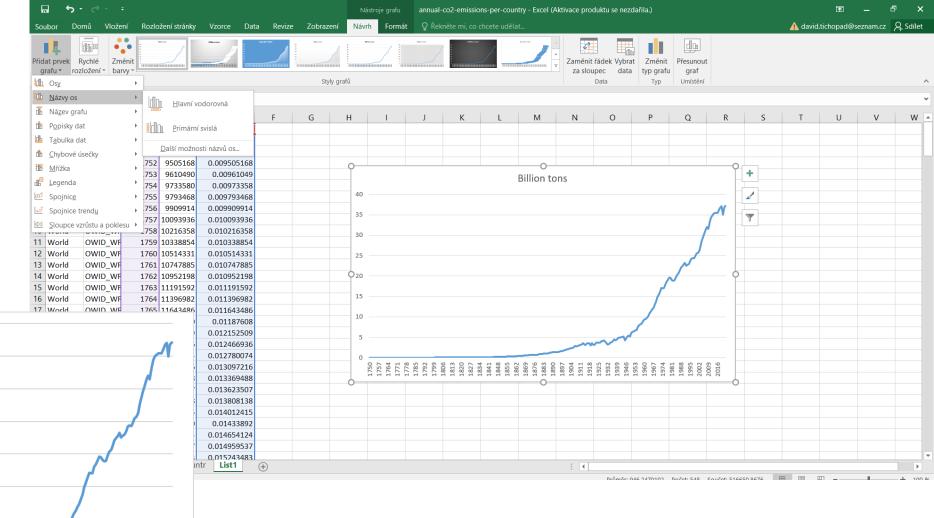
6	م ا	¢.	Ŧ					ann					
Sou	ubor Do	mů Vlož	ení Rozic	ožení stránky	Vzorce Da	ata Revize	Zobrazení	♀ Řekr					
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1	Entity	Code	Year	CO2	Billion tons								
2	World	OWID_WI	F 1750	9305937	0.009305937	7							
3	World	OWID_WI	F 1751	9407229	0.009407229								
4	World	OWID_WI	1752	9505168	0.009505168	3							
5	World	OWID_WI	1753	9610490	0.00961049)							
6	World	OWID_W	F 1754	9733580	0.00973358	3							
7	World	OWID_W	1755	9793468	0.009793468	3							
8	World	OWID_W	F 1756	9909914	0.009909914	ł							
9	World	OWID_W	F 1757	10093936	0.010093936	5							
10	World	OWID_WI	1758	10216358	0.010216358	3							
11	World	OWID_W	1759	10338854	0.010338854	ł							
12	World	OWID_WI	1760	10514331	0.010514331	L							
13	World	OWID_W	1761	10747885	0.010747885	5							
14	World	OWID_W	F 1762	10952198	0.010952198	3							
15	World	OWID_W	F 1763	11191592	0.011191592	2							
16	World	OWID_W	F 1764	11396982	0.011396982	2							
17	World	OWID_WI	F 1765	11643486	0.011643486	5							
18	World	OWID_WI	1766	11876080	0.01187608	3							
19	World	OWID_W	1767	12152509	0.012152509)							
20	World	OWID_W	1768	12466936	0.012466936	5							
21	World	OWID_W	1769	12780074	0.012780074	ł							
22	World	OWID_W	1770	13097216	0.013097216	5							
22		00000	4774	4000000	0.040000400								

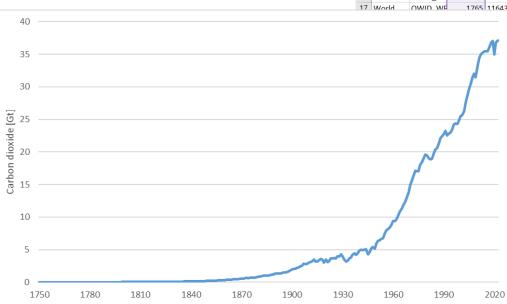
• now we will create a graph - highlight the columns according to the image

via ctrl

Rozložení stránky Vzorce Data Revize Zobrazení Q Řekněte mi, co chceré uděla Vložení Soubor 🤹 Visio Data Visualizer • CV 1.1 54 Ş 2 2 \sim the Store Bing Maps dh ' Kontingenční Doporučené Tabulka Obrázky Online Doporučené Kontingenční 3D Spojnicový Sloupcový Vzestupy/ Průřez Časová 🐬 Moje doplňky People Graph obrázky 🏻 tabulka kontingenční tabulky grafy graf ∗ Map poklesy osa Tabulky 🕞 Prohlídky Ilustrace Doplňky Minigrafy Filtry E1 ? Vložit graf X Α В D Q R 1 Entity Code Year CO2 Billion tons Doporučené grafy Všechny grafy World OWID 1750 9305937 0.009305937 World OWID 1751 9407229 0.009407229 Spojnicový World OWID 1752 9505168 0.009505168 Billion tons World OWID 1753 9610490 0.00961049 World OWID_ 1754 9733580 0.00973358 OWID_ World 1755 9793468 0.009793468 OWID_ World 1756 9909914 0.009909914 Rillion ton 25 World OWID_ 1757 10093936 0.010093936 0 World OWID 1758 10216358 0.010216358 World OWID 1759 10338854 0.010338854 World OWID 1760 10514331 0.010514331 13 World OWID 1761 10747885 0.010747885 14 World OWID 1762 10952198 0.010952198 OWID 1763 11191592 0.011191592 World World OWID 1764 11396982 0.011396982 Spojnicový graf se používá k zobrazení trendů v čase (roky, měsíce a dny) nebo kategorií, u kterých záleží na pořadí. Použiite ho, pokud máte hodně datových bodů a pořadí je důležité. World OWID 1765 11643486 0.011643486 18 World OWID 1766 11876080 0.01187608 OWID 19 World 1767 12152509 0.012152509 20 World OWID 1768 12466936 0.012466936 World OWID 1769 12780074 0.012780074 22 World OWID 1770 13097216 0.013097216 23 World 1771 13369488 OWID 0.013369488 OWID 0.013623507 24 World 1772 13623507 25 World OWID 1773 13808138 0.013808138 1774 14012415 26 World OWID 0.014012415 6 OWID 1775 14338920 0.01433892 World 28 World OWID 29 World OWID WF 1777 14959537 0.014959537 ОК Storno 1778 15243483 0.015243483 30 World OWID WE annual-co2-emissions-per-countr List1 (+)4

 you can now further modify the graph, for example add labels as shown in the image





- Now also try for your country (select your country instead of world in the filter)
- Then check out the page in the link provided on how world and your country's CO₂ emissions contribute to global warming

GAS OR WARMING	ACCOUNTING	FUEL OR LAND USE CH	HANGE COUN	т		
Warming impact	 Territorial Consumption-based 	All fossil emissions	✓ Per	country	Relative	to world total
2021 The global mean surface	global mean surface temperature change as a result el and industry emissions only	t of a country or region's	cumulative emis	sions of carbon dioxi		Our World in Data
0.14 °C	E Chart				Europe	ean Union (27)
0.12 °C						
0.1 °C						
0.08 °C			/	/		
0.06 °C						
0.04 °C						
0.02 °C		******				
۰ 1851	1880 1900 19	20 1940	1960 1	1980 2000	2021	
Play time-lapse	1851					2021
	2023) – <u>Learn more about this dat</u> d-greenhouse-gas-emissions CC BY			🛓 Download 🤘	Share []	Enter full-screen

Thank you for your attention